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SELF-ESTEEM AND INTERPERSONAL ATTRACTION TOWARD COMPETENT AND FRIENDLY PERSONS

by

© DOROTHY ANNE PHILLIPS

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE

OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF PSYCHOLOGY

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THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "Self-Esteem and Interpersonal Attraction Toward Competent and Friendly Persons" submitted by Dorothy Anne Phillips in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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ABSTRACT

It was hypothesized that two characteristics, competence and interpersonal relatedness or friendliness, which have been considered important to self-esteem by twentieth century theorists, would be important determinants of interpersonal attraction when perceived in others. Consequences of self-esteem for attraction to persons varying in competence and friendliness were investigated. Predictions were made from three social psychological theories, social comparison theory (Festinger, 1954), balance theory (Heider, 1958), and learning theory (Lott & Lott, 1972).

Two experiments were designed to test the predictions. Experiment I presented written interviews of the stimulus persons in a factorial design with two levels each of competence and friendliness. Experiment II presented adjective traits of stimulus persons in a factorial design with four levels each of competence and friendliness. In both experiments, subjects rated each stimulus person on competence, friendliness, how much they liked him and how much they anticipated he would like them. Subjects rated their own competence and friendliness to yield ratings of perceived similarity between subjects and stimulus persons.

Results of both experiments indicated that subjects liked competent and friendly others more than incompetent and unfriendly others regardless of their own self-esteem level. Contrary to these results, both social comparison theory and balance theory based on sentiment relations predicted that self-esteem would influence interpersonal attraction. Social comparison theory was based on the

assumption that subjects would perceive similarity between themselves and certain stimulus persons. Since support for predictions from social comparison theory as well as support for the assumptions on which predictions were based was lacking, this theory may predict relations when similarity is more salient. The balance theory-sentiment relations prediction was based on the assumption that subjects would anticipate more liking from competent and friendly others than from incompetent and unfriendly others. Since support for the predictions from balance theory-sentiment relations was lacking but support for the assumptions was present, this theory was rejected as mediating the relations between self-esteem and interpersonal attraction.

Both balance theory based on unit relations and learning theory based on secondary reinforcement predicted the results on the liking measure. However, support for perceived similarity, which was the basis of the balance theory-unit relations prediction, was not found and this theory was not supported. Support for the assumption that competence and friendliness develop secondary reinforcing properties, which was the basis of the predictions from learning theory, was indirect and the theory was tentatively accepted.

Results of these experiments are consistent with an hypothesis (Berscheid & Walster, 1969) that only when the stimulus person has evaluated the perceiver will self-esteem affect interpersonal attraction. An hypothesis that the perceiver need only be in a position to evaluate was discussed.

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INTRODUCTION

The neo-Freudian idea that a person cannot love others unless he loves himself (Fromm, 1939) suggests that liking others is related to one's own self-esteem. Although this idea has been viewed as important, little empirical evidence is available to support the hypothesis. One of the difficulties in evaluating this notion stems from the fact that the stimulus person usually has been defined globally. Tests have most often been a correlation between self-acceptance and acceptance of other people (Wylie, 1961). More specific evidence about the relation appears contingent upon identifying characteristics of the stimulus person which are likely to be differentially important to those with different self-esteem levels.

Which characteristics these might be was suggested by a review of twentieth century theoretical writing about self-esteem. If certain characteristics of self form the basis for developing self-esteem, these are presumably important characteristics in others as well. The two characteristics of self that have been viewed as important to self-esteem by many writers are competence and interpersonal relatedness. For most writers, a person's self-esteem was considered to depend either on his perception of his own interpersonal relatedness or on his perception of his competence or both. It is likely that these same characteristics, perceived in others, are major factors in determining liking of those others.

The purpose of this dissertation was to examine the relation between self-esteem and interpersonal attraction toward persons with

varying competence and interpersonal relatedness, according to predictions from social comparison theory (Festinger, 1954), balance theory (Heider, 1958) and from a learning theory of interpersonal attraction (Lott & Lott, 1972).

The dissertation begins with an analysis of twentieth century theories which considered self-esteem and its content or development. The analysis shows how the dimensions of interpersonal relatedness and competence were considered important for self-esteem. Following from the analysis of self-esteem theories, these two dimensions of competence and interpersonal relatedness were considered to be attributes of other persons which influence interpersonal attraction. Predictions derived from three social psychological theories consider the relations between overall self-esteem and attraction to persons with these attributes. Finally, the two experiments designed to distinguish between the theories are presented.[1,2]

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[1] In this dissertation, the analysis of self-other relations is confined to judgements made on the basis of certain stimulus information rather than on considering a direct interaction situation. Self-esteem and liking relations are different in the two situations (Dittes, 1959; Jacobs, Berscheid & Walster, 1971; Walster, 1965). Berscheid & Walster (1969) attributed the difference to the availability of information regarding the other's response to the perceiver and also considered a drive theory that would account for the relations when information is clearly available. The studies in this dissertation do not provide information about the other's response and therefore this theory was not considered in making predictions.

[2] Cohen (1959) also advanced a theory concerned with self-esteem and liking based on assumptions about psychological defenses. Since Cohen's theory was concerned with interpersonal influence in the direct interaction situation, this theory will not be considered in making predictions in this dissertation.

SELF-ESTEEM THEORIES

There are two major trends in the ideas about development of self-esteem. For some theorists, self-esteem arises out of inter-relatedness. Both Fromm (1939) and Horney (1950) viewed low self-esteem as developing from a lack of positive relationships with others. Horney thought low self-esteem arose as a result of basic anxiety or the feeling of being insignificant, helpless and endangered. She thought this feeling stemmed from a childhood uncertainty about the love of one's parents. Fromm described man's lack of relatedness in industrial society as freeing him not only from ties and traditions but also from the security and sense of belonging that was present in feudal societies. According to Fromm, lack of relatedness leads to intolerable feelings of helplessness. Other authors (Cooley, 1902; Mead, 1934; Sullivan, 1953) thought that self-esteem developed from the reflected appraisals, whether high or low, of significant others.

For other theorists, self-esteem developed from evaluation of some ability or capacity (Diggory, 1966; Pepitone, 1964, 1968). Diggory suggested that a person values primarily his abilities. Pepitone discussed self-evaluation, or the social and material rewards achieved, as being important to self-esteem. The idea of achieved capacity leading to high self-esteem was elaborated by White (1959, 1960, 1963) who asserted that an organism has a feeling of efficacy when it has the capacity to interact effectively with its environment. Although White emphasized the concept of competence or achieved capacity, he did not see it as a simple and sovereign concept, expected to explain everything. He differentiated the

concept of competence from the Freudian concept of libido as a motivating force and from the neo-Freudian concept of interpersonal environment as the single motivation for a developing child. He stated that competence had been ignored in the earlier theories. Thus, White implied that two important sources of motivation are competence and interpersonal relatedness. If this statement is accepted, it is then reasonable to suggest that a person will evaluate himself in regard to these two important sources of motivation. He has a feeling of efficacy if he achieves competence. He has a feeling of being significant and accepted if he has satisfactory interpersonal relations. Both of these feelings apparently contribute to the self-esteem of an individual.

Several theorists have included both ideas of competence and of interpersonal relatedness in their theories. Adler (1927) described the feeling of inferiority as being present in every child because of his real helplessness. Everyone tries to overcome this feeling by a compensatory striving toward success or competence in occupation and by solving the interpersonal problems of love and interest in others. More recently, Gergen (1971) noted that self-esteem includes feelings of esteem in social relations and in occupational abilities. Gergen's statement clearly includes the dimensions of competence in performance and interpersonal relatedness in his discussions of the basic characteristics of self-esteem. A more direct statement that these two attributes are important sources of self-esteem has been made by Coopersmith (1967). He defined self-esteem as an attitude of approval and the extent to which a person believes himself to

have power, significance, virtue and competence. For his pre-adolescent subjects he found beliefs about competence and significance to be the more important sources of self-esteem. By competence he meant the successful performance in meeting demands for achievement and by significance he meant the acceptance, attention, and affection of others.

From this analysis it is apparent that the two dimensions, interpersonal relatedness and competence, have been important to many theorists writing about the development of self-esteem or its content. In this study, self-esteem was viewed as an attitude toward the self represented by a feeling ranging from positive to negative, and consisting of beliefs about the self concerning one's inter-relatedness with others and about competence in some form of achievement.

CONSEQUENCES OF SELF-ESTEEM FOR INTERPERSONAL ATTRACTION

Early studies of the consequences of self-esteem for interpersonal attraction were based on the hypothesis (Fromm, 1939) that a person must like and accept himself in order to like and accept others. Although support for this hypothesis has been claimed, evidence in favor of the relation is correlational (see Wylie, 1961, for a review) which Wylie suggests may be due to a response set. In any case, the correlational evidence does not provide information about differential perception of specific characteristics in others by persons with varying levels of self-esteem.

If a person's self-esteem consists of beliefs about his

interpersonal relatedness and his competence, then these are presumably the characteristics he finds important in others. To predict the specific effects of self-esteem on attraction to others varying in competence and in interpersonal relatedness, several theories must be considered. The effects predicted by these theories are different and there is little empirical evidence available to identify any one of the theories as more valid than the others. An advance in understanding the relations between self-esteem and interpersonal attraction was anticipated by conducting a study specifically designed to assess which of the theories accounts for the data.

In discussing the specific effects of self-esteem on interpersonal attraction, self-esteem was considered to be an attitude toward the self and interpersonal attraction was considered to be an attitude toward others. Berscheid and Walster (1969) stated that interpersonal attraction has usually been measured with attitude scales and has usually been defined, at least implicity, as an individual's positive or negative attitude toward another person. In this thesis, attitudes toward the other focused on two characteristics, termed competence and friendliness, which were expected to be important since they have been identified as important dimensions for self-esteem. Competence referred to some achieved or inherent capacity which made the individual capable of performing in some tasks defined as important by himself or his society. Friendliness referred to how well the person got along with others and how much he was liked by others.

EVALUATION OF OTHER PERSONS VARYING IN COMPETENCE AND FRIENDLINESS

There are three current theories in social psychology concerned with self-other relations from which predictions may be made when there is no direct interaction between persons. The three theories, social comparison theory (Festinger, 1954), balance theory (Heider, 1958), and learning theory (Lott & Lott, 1972) each led to specific predictions about the relations between self-esteem and interpersonal attraction.

Predictions from the three theories were based upon two assumptions about self-esteem. It was assumed that persons with high self-esteem perceived themselves as competent and friendly while those with low self-esteem perceived themselves as incompetent and unfriendly. There is empirical support for these assumptions. Coopersmith (1967) found that low self-esteem persons reported greater difficulty in forming friendships than medium or high self-esteem persons although there was no difference in the number of clubs to which they belonged. Other evidence comes from Rosenberg (1968) whose subjects rated themselves on trait adjectives and on how much they cared about each trait. Low self-esteem subjects rated themselves as not likeable and 50% cared about it a great deal. Low self-esteem subjects also rated themselves not friendly but only 29% cared about it a great deal. Evidence for the competence assumption comes from a study by Shrauger (1972) who found that while self-esteem was not related to actual performance on a task, high self-esteem subjects estimated their performance to be better and were more confident than low self-esteem subjects. Fitch (1970)

found that after success feedback, high self-esteem persons attributed success to themselves more than did low self-esteem persons. After failure feedback, low self-esteem persons attributed failure to themselves more than did high self-esteem persons.

SOCIAL COMPARISON THEORY[3]

The analysis of self-esteem and interpersonal attraction based on social comparison theory (Festinger, 1954) is derived from the statement: 'If there is a drive toward evaluation of abilities and opinions, and if this evaluation is possible only with others who are close enough (in opinion or ability), then there should be some attraction to groups where others are relatively close.' Although it is not so stated in Festinger's outline of the theory, the derivation may be made that people will like similar others better than dissimilar others. If a high self-esteem person perceives himself as competent and friendly as is assumed, he should then perceive competent and friendly others as similar to himself and like them better than incompetent and unfriendly others. If low self-esteem persons perceive themselves as incompetent and unfriendly, they should perceive incompetent and unfriendly others as similar to themselves and like them better than competent and friendly others.

Evidence does support the proposition that people like others with similar personality traits (Shapiro, 1953; Secord & Backman, 1964; Newcomb, 1961; Byrne, 1961, 1969 & others) but these studies have not considered self-esteem. There is no evidence to support the derivation from social comparison theory regarding self-esteem.

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[3]Table 1, Page 17 displays the predictions from the theories.

BALANCE THEORY

Heider (1958) stated that an individual tends to perceive balance in the relations between persons. If the individual perceives something about himself, about another person and about that other person's relation to himself, he should strive toward balance in his perception of the relations between these three. Balance is achieved either when the relations are all positive or when two are negative and one is positive. He discussed two types of relations, sentiment relations which concern liking or disliking, and unit relations which concern belongingness. Unit forming characteristics of a relationship are such things as similarity, ownership, causality. Any triadic relationship may consist of only sentiment relations, of both sentiment relations and unit relations, or of only unit relations. Since this discussion concerns interpersonal attraction, which is a sentiment relation, only the first two types of triads are discussed.

Sentiment Relations

Considering sentiment relations and the attraction toward friendly and unfriendly others, the same result is predicted from balance theory as from social comparison theory. If a person likes himself and perceives that another person might like him (friendly other) he will like that person, making a balanced triad with three positive relations. If he likes himself and perceives that another might dislike him (unfriendly other) he will dislike that person, making a balanced triad with one positive and two negative relations.

If a person dislikes himself (low self-esteem) and perceives that another might like him (friendly other) he must dislike that person to maintain a balanced triad with one positive and two negative relations. If the person dislikes himself and perceives that another might dislike him, balance is maintained by liking that person, again making a triad with one positive and two negative relations.[4] From this analysis it is predicted that high self-esteem persons like friendly better than unfriendly others and that low self-esteem persons like unfriendly better than friendly others.

Although both social comparison theory and balance theory-sentiment relations would lead to the same predicted relation between self-esteem and liking of friendly and unfriendly others, the two theories are based on different assumptions. The social comparison theory analysis is based on the subject's perception of similarity between himself and friendly or unfriendly others. The balance theory-sentiment relations analysis is based on the perceiver's anticipating that the other will like or dislike him. Evidence regarding perceived similarity or anticipated liking could differentiate between the two interpretations.

To make predictions concerning attraction toward friendly and

---

[4] Heider (1958, p. 206) states that in the case of two negative relations, 'balance can be obtained either when the third relation is positive or when it is negative, though there appears to be a preference for the positive alternative.' Predictions in this dissertation were based on the basic balance theory in which Heider states (p. 205) that three negative relations are unbalanced. It was therefore predicted that when two relations were negative, the third would be positive.

unfriendly persons from balance theory-sentiment relations, it was assumed in the preceding analysis that both high and low self-esteem persons anticipate that friendly others will like them. To make predictions concerning liking of competent others from balance theory-sentiment relations some assumptions must be made about whether high and low self-esteem persons differ in their anticipation that these others would like them. Since no evidence exists on which to base an assumption, this dissertation assumed that both high and low self-esteem persons would anticipate more liking from competent than from incompetent others. Balance would be maintained if high self-esteem persons liked competent and disliked incompetent others while low self-esteem persons liked incompetent and disliked competent others. This result is the same as that predicted from social comparison theory. However, the balance theory-sentiment relations analysis would be supported by evidence regarding anticipated liking while the social comparison theory analysis would be supported by evidence concerning perceived similarity.

Wiest (1965) has provided support for the balance theory-sentiment relations analysis. He found that the degree of correspondence between subjects' liking for various others and his perceptions of how much they liked him varied positively with subjects' self-esteem.

Unit Relations

Heider (1958) stated that 'sentiment relations and unit relations tend toward a balanced state; sentiment and unit relations are

mutually interdependent' (p. 201). He meant that both sentiment and unit relations may occur in the same triad and will tend toward balance. Thus predictions about interpersonal attraction may be made from balance theory when one side of the triad is determined by available information about unit relations. When the perceiver has information only about the other's characteristics, the only unit relation he could perceive between himself and the other is one of similarity. This discussion will therefore consider the unit relation of similarity.

The balance theory-unit relations analysis states that a person who likes himself (high self-esteem) will perceive a friendly other as similar and will therefore like him while he will dislike an unfriendly other. High self-esteem persons will also perceive themselves as similar to, and also will like competent persons better than incompetent persons. So far the analysis is identical with social comparison theory. But for low self-esteem persons it is different. A person who dislikes himself and who perceives himself as dissimilar to a friendly person can only maintain balance by liking that person. If he perceives an unfriendly person as similar to himself he maintains balance by disliking that person. For competent and incompetent others the analysis is the same. Thus for the low self-esteem person, based on perceived similarity to others, the relations predicted from balance theory differ from those predicted from social comparison theory and also from those predicted from balance theory if only sentiment relations are considered. No studies have been conducted regarding unit relations and balance theory.

LEARNING THEORY

Some authors have taken the position that interpersonal attraction is a function of reinforcement associated with that other person (Byrne, 1969; Lott & Lott, 1970, 1968, 1972). Lott and Lott described a learning theory of interpersonal attraction based on the learning principles of earlier theorists and presented considerable evidence in support of this theory of liking (Lott & Lott, 1960, 1968).

Lott and Lott (1972) conceptualize learning to like another as a process of acquiring an implicit anticipatory goal response to a person present when reward is forthcoming. Such a person becomes a secondary reinforcer. In the same way, a person present during punishment may become a secondary negative reinforcer. Positive and negative attitudes toward others are thus defined as implicit anticipatory goal responses.

The learning theory interpretation of attitudes toward friendly and unfriendly persons and toward competent and incompetent persons is based on the expected previous experience of subjects in the presence of others with those characteristics. If we can assume that most persons have had a history of pleasant experiences or rewards in the presence of friendly persons, then all subjects would like friendly better than unfriendly others, regardless of their own self-esteem.

Learning to like competent or incompetent others may be somewhat different. It may be that a person experiences reward in the

presence of a competent person because of the other's competence. For example, he may be part of a winning group in which a competent persons assists toward the win. But it may be that a person experiences reward in the presence of others less competent than himself because of their adulation of him.

If liking a competent person is based on his secondary reinforcing properties, then both high and low self-esteem persons should have learned to like competent and to dislike incompetent others. If liking has been learned on the basis of adulation, then only persons who perceive themselves as competent, the high self-esteem persons, should have learned to like both competent and incompetent others. Low self-esteem persons, who do not perceive themselves as competent, would not have a history of receiving adulation from either competent or incompetent others. Low self-esteem persons would therefore dislike both competent and incompetent others more than would high self-esteem persons. Consistent with this latter hypothesis, Wylie (1961) reviews evidence that a positive correlation exists between self-esteem and liking others. However, she advised caution in interpreting these results since some findings have provided contrary evidence.

Two further derivations may be made from learning theory principles which apply to self-esteem and attraction toward competent and friendly others. Black (1965) has hypothesized that raising drive level during acquisition of a response should increase the strength of the anticipatory goal response. Lott et al. (1970) presented evidence that persons under high drive found reward-associated

stimulus persons to be more attractive than persons under low drive. If a low self-esteem person can be assumed to have greater drive toward friendly others because of his greater need for enhancement of self-esteem, then he should have acquired greater liking for friendly persons and less liking for unfriendly persons than a high self-esteem person. Some evidence in support of this hypothesis is provided by Jacobs, Berscheid and Walster (1971). In an experiment where the subject and target person interacted, they found that self-esteem and type of evaluation did significantly interact in determining liking. High self-esteem persons liked rejecting and ambiguously accepting others more than did low self-esteem persons while the latter liked accepting others slightly more than did high self-esteem persons.

In a second derivation from learning theory, Lott and Lott (1972) predicted that as a result of stimulus generalization, persons who are similar to liked or disliked others on salient characteristics can also function as positive or negative secondary reinforcers. If a high self-esteem person likes himself, and views himself as competent and friendly then he should like others with these characteristics. If a low self-esteem person dislikes himself and views himself as incompetent and unfriendly then he should dislike others with these characteristics. Thus all persons should like competent and friendly others and dislike incompetent and unfriendly others. This prediction, which is based on perceived similarity, is identical to the result predicted from Heider's balance theory with similarity relations. The two theories converge at this point and there would

be no way to determine whether balance or the learning of a reinforcement contingency was the mediating process. The same prediction is also made by learning theory based on secondary reinforcement. This result may be distinguished from the results based on similarity relations by evidence regarding perceived similarity.

STUDY DESIGNED TO TEST RELATIONS

To provide the empirical evidence to clarify which of the theories most adequately leads to the prediction of the relation between self-esteem and interpersonal attraction, two experiments were designed in which persons varying in competence and in friendliness were rated by persons who differed in their self-esteem. The two experiments differed in stimulus material and in the perceivers' anticipation of meeting the stimulus persons.

In the first experiment stimulus persons were described by a written interview and subjects were told that they would meet one of these persons. In the second experiment, the same subjects were presented with stimulus persons described only by adjectives. In both experiments, the stimulus persons varied in friendliness and in competence and subjects rated them on these traits as well as on how much the subject would like the person and how much he thought the person would like him. Finally, subjects rated themselves.

Predictions derived from social comparison theory, balance theory and learning theory about how much the subject likes the stimulus person are outlined in Table 1.

Table 1

Predicted Liking for Stimulus Persons based on Social Comparison Theory, Balance Theory and Learning Theory, when Subjects vary in Self-esteem (High or Low) and Stimulus Persons vary in Competence (Competent or Incompetent) and Friendliness (Friendly or Unfriendly).

	Social Comparison Theory		Balance Theory - Sentiment	
	High Self-esteem	Low Self-esteem	High Self-esteem	Low Self-esteem
Friendly	+	-	+	-
Unfriendly	-	+	-	+
Competent	+	-	+	-
Incompetent	-	+	-	+

	Learning Theory		Balance Theory - Unit	
	High Self-esteem	Low Self-esteem	High Self-esteem	Low Self-esteem
Friendly	+	+	+	+
Unfriendly	-	-	-	-
Competent	+	+(-)*	+	+
Incompetent	-(+)	-	-	-

*Bracketed prediction is based on learning because of adulation to like or dislike another.

METHOD

SUBJECTS

Subjects were male undergraduates from the University of Alberta, pre-selected on the basis of their score on the self-esteem scale (See Appendix A). The subjects were phoned and asked to participate in an experiment. They were offered either a credit for Introductory Psychology or $1.50.[5] All subjects participated in both Experiments I and II in groups of three to seven persons from the same self-esteem level.

A total of 87 subjects participated in the experiments. Responses from 18 of these subjects were discarded before the data were analyzed. Of those whose responses were discarded, 14 were suspicious that the videotape was not really to be a part of the experiment and one thought the interviews were made up. Thus, 17% of the subjects were discarded because they were suspicious. These were distributed over the self-esteem categories (5 high self-esteem, 6 moderate self-esteem, 4 low self-esteem). Responses from three subjects were randomly discarded to equalize groups in each self-esteem level.

The analyses for both Experiments I and II were conducted on data from the remaining 69 subjects with group size in the analyses ranging from two to five.

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[5] t tests between the means for those who received credit and those who received money are reported in Table D-21, Appendix D. No significant differences were found.

PROCEDURE

Subjects having the same self-esteem level arrived at the laboratory in groups of three or more. They were seated at tables in the same room. The experiment was introduced as a study of how people form impressions of other people and how their impressions are related to a discussion that takes place between them. The experimenter explained that: 'We think that impressions of others make a difference to the kind of interaction they have, but we don't know as much about this in a systematic way as we would like to. In this study you will first be asked to form your impressions of several persons by reading transcripts of interviews between them and one of our psychologists. You will be asked to give your impressions in some questions after each interview. Then I will ask each of you in turn to come into the other room to discuss with one of these persons whose interviews you've just read. The discussion topics will vary. They will either be about changing sex roles in modern society or about censorship.'

The rationale for telling subjects they would meet one of the stimulus persons was to engage their interest and their self-esteem in their judgements. To add emphasis that would involve their self-esteem the experimenter continued: 'Your discussions will take about five minutes each and will be recorded on videotape so that a team of analysts can look at the tapes later and score them by a procedure we call content analysis. Of course if you feel at any time you can't continue in the experiment you are free to go. We hope you won't do that though since it wouldn't help our research.'

The experimenter then asked for questions, handed out the booklets and indicated: 'Make your responses by putting one mark anywhere on each line to indicate how you rate the person on each characteristic.' This was repeated when subjects reached the first page of dependent measures.

When subjects were almost finished with the booklet, the experimenter left the room and returned about two minutes later. When all subjects were finished she announced: 'Well, the videotape equipment has broken down so I guess we can't do the interview part of the experiment. But I was going to have you do another task while the interviews were going on so at least you can do this.'

The experimenter then handed out booklets for Experiment II, collected booklets from Experiment I and read the instructions for Experiment II which were printed on the first page of the booklet: 'This is a study of how people form impressions of others. We want to know how much you understand and what kind of impression people form of another person when they are given only a small amount of information. At the top of each of the following pages is a list of words describing a single individual. The words are the impressions of that person given by two sources. What we have done is to ask our psychologists who interview people to give their impressions of the person's major characteristics in one or two words. Then we have combined the impressions of two psychologists about each individual to present to you. Your task is to read the words at the top of each page, form your impression of the person, then answer the questions about each person.'

When subjects had completed this booklet the reasons for the experiments were discussed with them, they were given credit or money, asked not to discuss the experiment and thanked for their participation.

STIMULUS MATERIAL

Experiment I

Four interviews were designed for use in this experiment. The person interviewed was presented as either competent or incompetent and either friendly or unfriendly. A 2 x 2 factorial design of the two factors produced interviews presenting stimulus persons who were: (1) competent-friendly, (2) competent-unfriendly, (3) incompetent-friendly, and (4) incompetent-unfriendly.

An interview designed as a practice and an anchor preceded the four experimental interviews. The stimulus person, portrayed as highly competent and friendly, was expected to produce ratings at the high end of the scale and place subsequent ratings more toward the middle of the scale. Since the purpose of this procedure was to provide practice and reduce the possibility of a ceiling effect, it was not deemed necessary to provide a low anchor.

The four experimental interviews were arranged in four different orders and booklets were presented randomly to subjects. Orders were arranged so that each interview was preceded and followed by each of the others once in the four orders.

Interviews were between an interviewer and a first year University student. The student was asked about his courses, whether he

found University work difficult and about his social life at University. Four courses of study were balanced across levels of competence and friendliness so that each course of study appeared approximately an equal number of times with each level of competence and friendliness.

Experiment II

A large number of adjectives from Anderson's (1968) list of personality trait words were pretested in order to choose adjectives for the stimulus persons in Experiment II. Using these pretest data, adjectives were chosen to represent competence at 4 levels of high (H), moderately positive (M+), moderately negative (M-), and low (L). Adjectives were also chosen to represent friendliness at four levels, high (H), moderately positive (M+), moderately negative (M-), and low (L). (See Pilot study of Stimulus Material, Appendix B.) Adjectives used in Experiment II to describe stimulus persons were those that were rated most strongly on competence but neutral on friendliness and those that were rated most strongly on friendliness but neutral on competence.

A 4 x 4 design with levels H, M+, M-, L of adjectives on factors representing the competence and friendliness of the stimulus persons was presented to subjects. Sixteen stimulus persons were each described by two adjectives representing competence and two adjectives representing friendliness. Each adjective was used twice but no two stimulus persons were exactly the same. For each stimulus person, one competence adjective and one friendliness adjective were

Table 2

Stimulus Material for Experiment II

Levels of C	Levels of F	SP#		
H	H	1	SYSTEMATIC SINCERE	OUTSTANDING CONSIDERATE
L	L	2	AIMLESS DISCOURTEOUS	NARROW-MINDED CONCEITED
H	H	3	BRILLIANT KIND	CLEVER WARM
H	M+	4	CLEVER SOFT-HEARTED	SELF-DISCIPLINED TALKATIVE
H	M-	5	SELF-DISCIPLINED EGOTISTICAL	INTELLIGENT BOASTFUL
H	L	6	INTELLIGENT BOSSY	BRILLIANT GROUCHY
M+	H	7	DELIBERATE WARM	DIGNIFIED KIND-HEARTED
M+	M+	8	DIGNIFIED TALKATIVE	QUICK SOFT-SPOKEN
M+	M-	9	QUICK BOASTFUL	DEFINITE DISSATISFIED
M+	L	10	DEFINITE GROUCHY	DELIBERATE HARD-HEARTED
M-	H	11	UNSYSTEMATIC KIND-HEARTED	UNTIDY GOOD-HUMORED
M-	M+	12	UNTIDY SOFT-SPOKEN	FRIVOLOUS GENTLE
M-	M-	13	FRIVOLOUS DISSATISFIED	CONFORMIST UNPOPULAR
M-	L	14	CONFORMIST HARD-HEARTED	UNSYSTEMATIC IRRITATING
L	H	15	LAZY GOOD-HUMORED	FORGETFUL KIND
L	M+	16	FORGETFUL GENTLE	UNDECIDED SOFT-HEARTED
L	M-	17	UNDECIDED UNPOPULAR	UNINQUISITIVE EGOTISTICAL
L	L	18	UNINQUISITIVE IRRITATING	LAZY GROUCHY

Note 1. The first and third words on each line represent the level of competence noted at left under column C; the second and fourth words represent the level of friendliness noted under column F.

Note 2. SP#1 and SP#2 represent the high and low anchor SPs respectively.

said to be the impression of one psychologist who had interviewed the person and the other two adjectives, the impression of a second psychologist.

The 16 stimulus persons were presented in one of four random orders. They were preceded by two practice sheets with persons described as (1) High competent, High friendly and (2) Low competent, Low friendly. These were intended as practice and as high and low anchors. Both high and low anchor sets were included to keep the design consistent with that used by Anderson (1965, 1968, 1971). (Table 2 presents the stimulus person and anchor sets of adjectives.)

DEPENDENT MEASURES

The same rating sheet appeared for each interview in Experiment I and for each stimulus person described by adjectives in Experiment II. Subjects rated each stimulus person on 14 characteristics by placing a single mark on a 90 mm line with the ends labelled, 'Not at all characteristic of him' and 'Extremely characteristic of him.' There were four positive and four negative characteristics related to friendliness and three positive and three negative characteristics related to competence. These were selected from a list presented by Anderson (1968). Seven of these 14 adjectives had been pretested in a pilot study for Experiment II. Table 3 presents the pretest ratings of competence and friendliness and likeableness ratings from Anderson (1968). Pretest ratings are the sum of the responses made

Table 3

ADJECTIVES USED IN DEPENDENT MEASURE for both EXPERIMENT I and EXPERIMENT II with Ratings of Competence (C), Friendliness (F) from Pilot Study and Likeableness (L) from Anderson (1968).

Category	Adjective	C	F	L
Positive Friendly	COURTEOUS	9*	40	494
	PLEASANT	5	44	495
	GOOD-NATURED	17	50	527
	FRIENDLY	**		519
Negative Friendly	COLD	-13	-48	113
	UNFRIENDLY			92
	DISCOURTEOUS	-11	-44	110
	UNPLEASANT			104
Positive Competent	COMPETENT			447
	EFFICIENT			482
	OUTSTANDING	40	5	492
Negative Competent	INCOMPETENT			110
	DULL	-22	-20	121
	INEFFICIENT			178

*a higher score indicated the person with this trait was rated more competent (C) or friendly (F) or likeable (L).

**ratings for some adjectives were not available from the Pilot study.

by 21 subjects asked to rate each adjective for competence and for friendliness on a 9 point scale from -4 to +4; Likeableness ratings are the sums of responses made by 100 subjects rating each adjective for likeableness on a 7 point scale from 0 to 6.

Rather than using bipolar adjectives, each adjective on the dependent measure had a separate rating scale so that ratings of positive and negative characteristics could be analyzed separately.

At the bottom of each rating sheet, subjects were asked to rate 'How much do you feel that you would like this person?' on a 90 mm line with the ends labelled 'Like him very much' and 'Dislike him extremely' and to rate 'How much do you think this person would like you?' on a scale with the ends labelled 'Like me very much' and 'Dislike me extremely.' A copy of the complete rating scale may be found in Appendix C.

SELF-ESTEEM SCALE

A new scale consisting of 12 items about feelings toward the self was used to measure self-esteem. Reliability and validity of the scale were tested. The scale was found to be internally consistent with all items correlating more than .54 with the sum. Test-retest reliability for males was .69 ($n = 24$).

Validity was tested by correlation with another test intended to measure self-esteem (Janis & Field [1959] Feelings of Inadequacy Scale) yielded $r = .66$ ($n = 176$) and correlation with responses to a scale not intended to measure self-esteem (Rotter's [1966] Internal-External Control of Reinforcement Scale) yielding $r = -.27$ ($n = 656$).

These correlations differ significantly providing some evidence for the validity of the scale as a measure of self-esteem. (Appendix A gives a full report of the development of the self-esteem scale.)

SELF RATING DURING EXPERIMENTAL SESSION

In order to evaluate self rating at the time of the experiment subjects were asked to rate themselves on a scale consisting of the 14 adjectives of the dependent measure. This scale appeared at the end of the booklet for Experiment II.

ASSUMPTIONS REGARDING SELF-ESTEEM GROUPS

In making predictions from the theories, it was assumed that persons with high self-esteem perceive themselves as competent and friendly while those with low self-esteem perceive themselves as incompetent and unfriendly. Evidence from a pilot study conducted prior to the experiments supported this assumption. Scores for samples of male subjects who were high and low on the self-esteem scale distribution were compared. As expected, high scorers on the self-esteem scale scored higher on separate items intended to measure self ratings of friendliness and competence. (Results of this pilot study were reported fully in Appendix A, pages A-8, 9, & 10.)

RESULTS

DEPENDENT MEASURES

Subjects responses to each adjective were scored by measuring where the mark occurred in millimeters on the line.[6] Scale ends were marked 'Not at all characteristic of him' and 'Extremely characteristic of him.' For each stimulus person, responses to adjectives in each of the four categories, Positive friendly, Negative friendly, Positive competent and Negative competent, were summed. Then scores for overall Competent were calculated by subtracting Negative from Positive competent sums. Overall Friendly scores were calculated by subtracting Negative from Positive friendly sums. Competent, Friendly, and Total Evaluation scores along with the scores for the items 'How much do you feel that you would like this person?' (Liking) and 'How much do you think this person would like you?' (Anticipated Liking) were analyzed by analysis of variance.

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[6] Lines were 90 mm except on some pages where they were 92 or 88 mm in length. Responses on these latter were increased or decreased by a fraction (90/92 or 90/88) and rounded.

Missing responses were estimated in the following way: (1) If a response to only one item within a category was missing (e.g., if the response for efficient was absent but the others for Positive competent were present) it was replaced by the average of that subject's other responses in that same category, for that stimulus person. (2) If all responses in a category were missing, the category was filled with the mean response of other subjects in that cell who formed a group by participating together in the experiment. In Experiment I, out of a total of 4416 responses for all subjects, 4 were replaced by category mean (1) and 4 were replaced by a group mean (2). In Experiment II of 17,664 total responses, 16 were replaced by a category mean (1) and 50 by a group mean (2).

Subjects took part in the experiments in groups consisting of from three to seven persons in the same room. Although they were not allowed to talk to each other, it was considered possible that some effect due to groups could have occurred. For that reason, in each analysis the subjects within treatments sum of squares was divided into its components, the subjects within groups and groups within treatments sums of squares. The groups within treatments mean square was tested with the appropriate subjects within groups mean square. Winer (1962, p. 203) suggests that to keep Type 2 error small (accepting the hypothesis of no groups effect when it should be rejected) tests should be made with a numerically high Type 1 error. Setting α at .25, there are 10 of the total of 40 mean squares including groups which are significant. On this basis it was decided to use the groups within self-esteem levels mean squares in all cases to test the effects in all analyses.

MANIPULATION CHECKS

It was expected that subjects would perceive the differences between competent and incompetent persons and between friendly and unfriendly persons in both experiments. Evidence that these differences were perceived comes from several analyses.

Competent and Friendly: Experiment I

When asked to rate Friendliness, the main effect for the independent variable Friendly ($F = 50.77$, $df = 1/18$, $p < .005$) showed that subjects rated the friendly and unfriendly targets as expected. When asked to rate Competence, the main effect for the independent

variable Competent ($F = 54.11$, $df = 1/18$, $p < .005$) showed that subjects rated competent and incompetent targets as expected. Means for these effects are presented in Table 4.. Summaries of analyses of variance of ratings of Friendliness and Competence are presented in Appendix D, Tables 5 and 7.

These analyses indicated that the manipulations in Experiment I were very strong and in the expected directions. However, when rating Competence, the main effect for the independent variable Friendly ($F = 12.86$, $df = 1/18$, $p < .005$) indicated that friendly persons were considered more competent than unfriendly persons. While this result for Experiment I indicates that the two factors, Competent and Friendly, are not entirely independent of each other, it does not detract from the evidence that subjects clearly identified the two independent variables as expected.

Competent and Friendly: Experiment II

In ratings of Friendliness, a main effect for the independent variable Friendly ($F = 285.70$, $df = 3/54$, $p < .005$) provided evidence that subjects rated friendly and unfriendly targets as expected. As well, a main effect for the independent variable Competent ($F = 12.33$, $df = 3/54$, $p < .005$) showed that subjects considered a competent person more friendly than an incompetent person.

Analysis of Competence ratings showed that subjects rated competent and incompetent stimulus persons as expected ($F = 190.20$, $df = 3/54$, $p < .005$) and that they also considered friendly persons to be more competent than unfriendly ($F = 89.47$, $df = 3/54$, $p < .005$).

Table 4

EXPERIMENT I: Mean Ratings on Measures, Friendliness, Competence

Factor		FRIENDLY	UNFRIENDLY	COMPETENT	INCOMPETENT
Measure	FRIENDLINESS	150.47	83.64	121.13	112.98
	COMPETENCE	44.28	19.51	71.17	-7.38

Table 5

EXPERIMENT II: Mean Ratings on Measures, Friendliness, Competence

Factor		FRIENDLY		UNFRIENDLY		COMPETENT		INCOMPETENT	
		HF	M+F	M-F	LF	HC	M+C	M-C	LC
Measure	FRIENDLINESS	204.45	178.56	-70.47	-142.56	51.99	48.58	45.93	23.48
	COMPETENCE	62.48	53.04	-1.30	-15.76	112.95	63.09	-28.78	-48.80

Note. HF denotes high friendly; M+F denotes moderately friendly; M-F denotes moderately unfriendly; LF denotes low friendly; HC denotes high competence; M+C denotes moderately competent; M-C denotes moderately incompetent; LC denotes low competent.

As in Experiment I, this effect supports the conclusion that the factors Competent and Friendly are not independent of each other. Means for these effects are presented in Table 5. Summaries of analyses of variance for Friendliness and for Competence ratings are in Appendix D, Tables D-6 and D-8.

It is clear that the initial intent to provide stimulus persons with varying levels of competence and friendliness was successful in both Experiments I and II.

SELF-ESTEEM

Subjects were selected on the basis of their self-esteem scores from measures taken at the beginning of the academic year. High self-esteem subjects who actually participated formed 27% of the distribution (mean = 51.74), moderate self-esteem subjects formed 26% of the distribution (mean = 45.96) and low self-esteem subjects formed 18% of the distribution (mean = 36.35).

Since the experiments were conducted six months after the self-esteem measure was taken, it is possible that these levels had changed. However, test-retest reliability of the self-esteem measure over periods of three weeks to three months was high ($r = .69$). There is also some evidence from the time of the experiment to indicate that the groups actually taking part did differ in their self perception. Although on the Total Evaluation for self rating at the end of the experimental session, high and low self-esteem subjects did not differ, analysis of variance of the positive adjectives only indicated that high self-esteem subjects rated themselves

significantly more positively than did low self-esteem subjects ($F = 6.58$, $df = 1/40$, $p < .05$). The mean rating for high self-esteem subjects was 435.00, for low self-esteem subjects was 384.52. Summary of analysis of variance is presented in Table D-22, Appendix D.

EXPERIMENTAL PREDICTIONS

The main concern of the experiments was with the relationship between a subject's Self-esteem and his Liking ratings of Friendly and Unfriendly stimulus persons and the relationship between a subject's Self-esteem and his Liking ratings of Competent and Incompetent stimulus persons. Several possible predictions derived from different theories were discussed. Since the results for Experiment I and Experiment II were very similar they will be presented together. Complete summaries of analyses of variance for both Experiments are given in Appendix D.

Self-Esteem and Friendly-Unfriendly Stimulus Persons

The obtained results, consistent for both Experiments, showed that there was no interaction between a person's self-esteem and his Liking rating of persons varying in levels of friendliness. All subjects liked friendly stimulus persons more than unfriendly stimulus persons regardless of their own self-esteem level. (See Table 7 for summaries of analyses of variance for Experiments I & II. Mean ratings are presented in Table 6.)

Correlations between self-esteem and Liking ratings of friendly and unfriendly persons also indicated no relation between the two variables for either experiment. Correlations are presented in Table 9.

Table 6

Mean Liking Ratings for Friendly and Unfriendly Stimulus Persons by Subjects with High, Moderate or Low Self-Esteem

	EXPERIMENT I		EXPERIMENT II			
	Friendly	Unfriendly	HF	M+F	M-F	LF
High Self-esteem	29.28	40.70	23.02	26.70	56.67	60.49
Moderate Self-esteem	35.48	42.87	24.76	28.42	58.08	61.37
Low Self-esteem	31.26	40.57	25.43	28.10	59.36	65.45

Note. A low score indicates greater liking.

HF denotes highly friendly.
M+F denotes moderately friendly.
M-F denotes moderately unfriendly.
LF denotes low friendly.

Table 7

Summaries of Analyses of Variance of Liking Ratings

	EXPERIMENT I			EXPERIMENT II		
Source	DF	MS	F	DF	MS	F
SELF-ESTEEM (SE)	2	427.73	0.87	2	614.27	1.25
GROUPS within SE	18	493.42	1.58	18	490.48	0.53
SUBJECTS within G	48	312.61		48	920.54	
C	1	1206.97	6.20*	3	4523.53	19.22***
SE x C	2	46.28	0.24	6	310.69	1.32
GROUPS (SE) x C	18	194.52	0.92	54	235.36	1.76**
SUBJECTS (G) x C	48	212.31		144	133.66	
F	1	6134.73	35.11***	3	106572.37	256.66***
SE x F	2	187.92	1.08	6	108.66	0.26
GROUPS (SE) x F	18	174.74	0.57	54	415.22	1.36
SUBJECTS (G) x F	48	308.23		144	305.17	
C x F	1	170.75	1.04	9	316.54	2.67**
SE x C x F	2	13.65	0.08	18	144.66	1.10
GROUPS (SE) x C x F	18	164.75	1.15	162	118.43	0.90
SUBJECTS (G) x C x F	48	142.92		432	131.32	

* $p < .05$
** $p < .01$
*** $p < .005$

Table 8

Mean Liking Ratings for Competent and Incompetent Stimulus Persons by Persons with High, Moderate and Low Self-esteem.

	EXPERIMENT I		EXPERIMENT II			
	Competent	Incompetent	HC[a]	M+C	M-C	LC
High Self-esteem	31.41[b]	38.57	34.90	38.50	46.86	46.62
Moderate Self-esteem	37.37	40.98	40.96	41.78	44.97	44.92
Low Self-esteem	33.61	38.22	40.13	43.63	46.26	48.32

Note a. HC denotes high competent.
M+C denotes moderately competent.
M-C denotes moderately incompetent.
LC denotes low competent.

b. A low score indicates greater liking.

Self-Esteem and Competent-Incompetent Stimulus Persons

For the relations between self-esteem and Liking ratings of competent and incompetent stimulus persons, the results from both experiments indicated that subjects liked competent more than incompetent stimulus persons. (Experiment I: $F = 6.20$, $df = 1/18$, $p < .05$; Experiment II: $F = 19.22$, $df = 3/54$, $p < .005$.) Mean ratings are presented in Table 8 and analyses of variance in Table 7. In Liking ratings the interaction between self-esteem and Competent stimulus persons was not significant in either of the experiments. Correlations between self-esteem and Liking ratings of competent others are discussed under the heading Supplementary Analyses.

SUPPLEMENTARY MEASURES

To assist in differentiating between theories from which similar predictions were derived, two supplementary measures were taken during the experiments. For both social comparison theory and balance theory-unit relations, the assumption of perceived similarity was the basis of the predictions. Consequently, subjects rated themselves on competence and friendliness so that perceived similarity between themselves and stimulus persons could be calculated. The assumption underlying the prediction based on balance theory-sentiment relations was that subjects would anticipate more liking from some stimulus persons than from others. Consequently, a second supplementary measure was taken. Anticipated liking was measured by the response to the question 'How much do you think this person would like you?'

Perceived Similarity

For perceived similarity to be the basis of the result predicted by the social comparison theory and the balance theory unit relations analyses, it would be necessary for high self-esteem subjects to perceive themselves as similar to competent and friendly others and for low self-esteem subjects to perceive themselves as similar to incompetent and unfriendly others in these experiments. To determine whether these assumptions were justified, subjects' self ratings of friendliness were compared with their friendliness ratings of stimulus persons who were in fact either friendly or unfriendly. Analysis of variance of absolute differences between these scores should yield an interaction between self-esteem and the stimulus persons such that high self-esteem subjects' self ratings are closer to their ratings of friendly than of unfriendly persons while low self-esteem subjects' self ratings are closer to their ratings of unfriendly than of friendly persons. However, analyses of variance indicated that no interactions occurred.[7] In fact, main effects for friendly in both Experiment I ($F = 13.00$, $df = 1/18$, $p < .005$) and Experiment II ($F = 131.91$, $df = 1/18$, $p < .005$) indicate that all subjects perceived themselves as more similar to the friendly than to the unfriendly stimulus persons. (Tables 24 to 27, Appendix D, present analyses of variance and means.) In the same way, if the assumption regarding perceived similarity with competent others were

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[7] Consistent with other analyses of variance in this dissertation, all effects were tested with the appropriate groups within self-esteem levels mean square.

correct, analyses of variance should yield interactions between self-esteem and absolute difference ratings of competent and incompetent others. However, no such interactions occurred and in fact, main effects for competent in both Experiment I ($F = 15.43$, $df = 1/18$, $p < .005$) and in Experiment II ($F = 35.83$, $df = 1/18$, $p < .005$) indicate that all subjects perceived themselves as more similar to competent than to incompetent others. (Tables 28 to 31, Appendix D, present analyses of variance and means.) Thus, in neither Experiment I nor in Experiment II was there any support for the assumptions regarding perceived similarity which were the basis of predictions from social comparison theory and from balance theory-unit relations.

Anticipated Liking

For anticipated liking to be the basis of the result predicted by balance theory-sentiment relations, it would be necessary for all persons to anticipate more liking from friendly and competent others than from unfriendly and incompetent others. Responses on the anticipated liking measure indicated main effects for competent and friendly stimulus persons such that both high and low self-esteem persons anticipated more liking from friendly than from unfriendly others and from competent than from incompetent others.

(Experiment I: Competent main effect $F = 4.06$, $df = 1/18$, $p < .10$)

(Experiment II: Competent main effect $F = 6.14$, $df = 3/54$, $p < .005$)

(Experiment I: Friendly main effect $F = 10.02$, $df = 1/18$, $p < .01$)

(Experiment II: Friendly main effect $F = 168.34$, $df = 3/54$, $p < .005$)

Thus, the anticipated liking measure did provide support for the assumptions of the balance theory-sentiment relations analysis. Except for the Competent main effect of Experiment I which failed to [illegible] an acceptable level of significance, all main effects are highly significant and indicate support for the assumptions.

SUPPLEMENTARY ANALYSES

Correlations Between Self-esteem and Liking Ratings

Since no interactions between self-esteem and ratings of competent or friendly stimulus persons occurred in the analyses of variance and since a relation between self-esteem and Liking ratings is theoretically an important issue, further analyses were conducted to determine whether any relation existed.

The first analysis correlated self-esteem as measured prior to the experiment with Liking ratings of various stimulus persons. For each subject, ratings of competent and incompetent persons were summed and ratings of friendly and unfriendly persons were summed yielding four stimulus person scores. Self-esteem was then correlated with each of these sums. Table 9 presents the correlations.

The correlation between self-esteem and Liking ratings of competent stimulus persons in Experiment II is the only one which reached significance ($r = -.38$; Low score for Liking indicates greater liking). This correlation indicated that the higher the self-esteem, the higher the liking of competent persons. However, all other correlations were near zero so a consistent set of relations between self-esteem and liking was not found in this analysis.

Table 9

Correlations: Self-esteem (Pre-measured) and Liking of Competent; Incompetent, Friendly, Unfriendly Stimulus Persons, Experiments I and II.

	Competent	Incompetent	Friendly	Unfriendly
Experiment I	.002	.00	.00	.00
Experiment II	-.38**	.001	-.002	.005

Note a. A low score for Liking indicates greater liking.

** $p < .005$

Partial Correlations

Both social comparison theory and balance theory-sentiment relations predicted that the relation between judged liking and competence of the stimulus person and between liking and friendliness would be different for high and for low self-esteem persons. In analyses of variance of Liking ratings, no interactions were found between self-esteem and the independent variable competent nor between self-esteem and friendly as would be predicted by these theories. However, in both Experiments I and II, analysis of the manipulation check data indicated that manipulated friendliness of the stimulus person affected ratings of his competence and vice versa. Thus liking of a competent person may have been affected by the perception of his friendliness while liking of a friendly person may have been affected by the perception of his competence. Table 10 presents correlations between competence and friendliness ratings of all stimulus persons for each of the self-esteem groups.

In order to rule out the effect of the irrelevant factor, partial correlations were calculated for each of the self-esteem groups. Differences in correlations for high and low self-esteem groups would indicate that the relations between liking and judged competence or between liking and judged friendliness was different for the two groups as predicted by the two theories.

In both Experiments I and II it was found that the correlation between liking and competence ratings with the effect of judged friendliness removed was not significantly different for high and low self-esteem persons. The relation between liking and friendliness

Table 10

Correlations and Partial Correlations Between Ratings of Competence, Friendliness and Liking for all Stimulus Persons by Subjects with High, Moderate and Low Self-Esteem

		EXPERIMENT I			EXPERIMENT II		
Self-Esteem		High	Moderate	Low	High	Moderate	Low
Competence and Liking	Correlation	-.43[a]**	-.33**	-.27*	-.49**	-.44**	-.56**
	Partial Correlation[b]	-.27*	-.03	-.12[c]	-.26*	-.20*	-.31[c]*
Friendliness and Liking	Correlation	-.62**	-.65**	-.42**	-.81**	-.83**	-.75**
	Partial Correlation[b]	-.55**	-.59**	-.35[c]**	-.76**	-.79**	-.66[c]**
Competence and Friendliness	Correlation	.38**	.48**	.40**	.44**	.41**	.51**

Note a. Correlations are negative because a low score for Liking denoted greater liking but high scores for Competence and Friendliness meant more favorable ratings.

b. Partial correlations between Competence and Liking control for the effect of Friendliness; Partial correlations between Friendliness and Liking control for the effect of Competence.

c. Differences between partial correlations for High and Low self-esteem persons are not significant ($p > .05$).

* $p < .05$

** $p < .005$

ratings with the effect of judged competence removed was not different for high and low self-esteem persons. These results indicated that despite the effect of competence on the perception of friendliness and vice versa, self-esteem in these epxeriments did not influence liking of either competent or friendly persons. Table 10 presents the partial correlations.

DISCUSSION

The main focus of this study was to consider whether self-esteem influences interpersonal attraction in a situation where there was no direct interaction between persons. Previous research has found either a positive correlation between self-esteem and liking (see Wylie, 1961) or no relation (Walster, 1970; Zelen, 1954a, 1954b; Zimmer, 1956). However, in these studies, characteristics of the stimulus persons may not have been those important for identifying the relation between self-esteem and interpersonal attraction. In this dissertation, two characteristics on which a person values himself were identified and assumed to be important characteristics for interpersonal attraction when perceived in others. The relation between overall self-esteem and these characteristics was then investigated.

The two characteristics which were defined as important to self-esteem were (1) competence or a sense of capacity in some form of achievement, and (2) interpersonal relatedness or the feeling of getting along with and being liked by some significant others. When perceived in others, competence and interpersonal relatedness or friendliness, were expected to be important in judging liking.

From social comparison theory (Festinger, 1954) and balance theory based on sentiment relations (Heider, 1958) interactions were predicted between self-esteem and liking ratings of competent others and between self-esteem and liking ratings of friendly others in

analysis of variance. Results of Experiments I and II did not support these predictions since no interactions with self-esteem occurred on the dependent measure of liking for the other person.

The predictions from balance theory-sentiment relations, were based on the assumptions that all persons would anticipate more liking from friendly than from unfriendly others and that all persons would anticipate more liking from competent than from incompetent others. Analysis of the anticipated liking response confirmed that all subjects anticipated more liking from friendly than from unfriendly others in both experiments, and also that all persons anticipated more liking from competent than from incompetent others, although this latter effect occurred only in Experiment II. These anticipated liking results provided support for the assumptions necessary to the balance theory-sentiment relations prediction, but results on the dependent measures did not support the theory. Consequently, this theory can be rejected with some confidence as a predictor of the relations between self-esteem and interpersonal attraction toward friendly and competent others.

The prediction from social comparison theory was based on an assumption of perceived similarity. It was assumed that high self-esteem persons would perceive themselves as more similar to the friendly and competent stimulus persons while low self-esteem persons would perceive themselves as more similar to unfriendly and incompetent stimulus persons. The evidence regarding perceived similarity in both experiments did not support the assumptions. In fact, all subjects perceived themselves as more similar to friendly

and competent others than to unfriendly and incompetent others in both experiments. Thus, although the predictions from social comparison theory were not supported, neither were the assumptions regarding perceived similarity supported. Since subjects did like others they perceived as similar to themselves it may be that the social comparison theory prediction would account for results in situations where differential perceived similarity occurred.

The two sets of predictions from theories can be distinguished on the basis of evidence regarding interactions between self-esteem and liking for friendly others or for competent others or the lack of such interactions. For this reason it is important to discuss further evidence relating to the lack of interactions found in the results of Experiments I and II. An analysis of variance of all dependent measures including ratings of liking, total evaluation, competence, friendliness, and anticipated liking, there were no interactions between self-esteem and ratings of competent or friendly target persons. In addition further analyses which attempted to discover whether any relations between the factors existed, did not provide any information. The positive evidence of a relation found in these analyses was either an isolated effect or a non-significant trend. In one case correlations indicated that high self-esteem correlated significantly higher with liking of competent others than did low self-esteem. But this was the only significant effect in the set of correlations between self-esteem and liking of competent, incompetent, friendly and unfriendly others. In the second case, partial correlations yielded non-significant trends in the predicted

direction. Controlling for competence, the correlation between ratings of liking and friendliness was greater for high self-esteem than for low self-esteem persons in Experiment I. None of these differences is significant. Thus, none of the efforts in the further analyses can be taken as evidence that a relation exists between self-esteem and interpersonal attraction in these experiments. All the evidence supports the conclusion that a person's level of self-esteem does not interact with his liking of competent men or friendly others.

A second set of relations between self-esteem and liking of friendly and competent others was predicted from balance theory based on similarity relations and learning theory based on secondary reinforcement. From both theories consistent with the obtained results main effects were predicted for the competent and for the friendly stimulus persons on liking ratings.

However, the predictions derived from balance theory will relations were based on the assumptions that high self-esteem persons would perceive themselves to be more similar to competent and friendly others than would low self-esteem persons. As discussed previously, there is no support for these assumptions in the measures taken. Since its assumptions were not met, the mediating process leading to the obtained results could not have been those stated by balance theory based on similarity relations.

The derivation from learning theory which predicted the obtained results was based on the assumption that as a result of stimulus generalization, persons who resemble or are similar to liked or

disliked others on salient characteristics may function as positive or negative secondary reinforcers. Thus, all persons should like others they perceive as similar to themselves. The perceived similarity analyses in this dissertation showed that both high and low self-esteem persons perceived friendly and competent others as more similar to themselves than unfriendly and incompetent others. Given this perceived similarity information, it is possible to predict from the learning theory based on stimulus generalization that both high and low self-esteem persons will like competent and friendly others more than incompetent and unfriendly others as in fact occurred.

However, learning theory based on secondary reinforcement can also account for the obtained results. Predictions from the theory were based on the assumption that certain traits have developed secondary reinforcing properties for most persons. The predictions were based on the assumption that competence and friendliness to others are attributes which have acquired secondary reinforcing properties by being characteristics of persons who were present when reward was obtained. A direct test for the assumption would require manipulation of the reward contingencies associated with attributes and is not available, however, results of the anticipated liking measures do provide indirect support for the assumption. All subjects anticipated more liking from competent and friendly others than from incompetent and unfriendly others. As Berscheid and Walster (1969) have noted, liking or affection from another person is a powerful reinforcer and the results suggest that positive attitudes toward others are mediated by anticipated liking. If competence and

friendliness to others are associated with anticipated liking, they should have secondary reinforcing properties.

Both interpretations from learning theory predicted the obtained results, but the stimulus generalization interpretation required information about perceived similarity before the correct prediction could be made. The interpretation based on secondary reinforcement is therefore the best supported by the results of these studies.

Although learning theory based on secondary reinforcement can account for the results obtained in this dissertation, the paradigm used in the experiments emphasized the inference process which is considered only a portion of the person perception process.[1] Any judgment of traits or of liking must be an inference while based on information that does not directly state that trait. In Experiment I the information was an interview in which the stimulus person revealed certain features of his academic and social behavior. In Experiment II the information was a list of trait adjectives including neither the adjective competent nor friendly. To complete both tasks of judgment, the subjects were required to retrieve information previously stored which led them to inferences concerning competence, friendliness, and their liking of the stimulus persons.

[1] Shrauger and Altrocchi (1964) consider the person perception process to consist of three phases, each influenced by different variables. (1) selecting cues influenced by cognitive control variables, (2) drawing inferences influenced by motivational variables, (3) giving an overt verbal response influenced by situational variables. The paradigms used in this study restricted the selection of cues to those provided by the experimenter and there were few situational variables which might have influenced verbal report.

According to Shrauger and Altrocchi (1964) motivational variables are likely to affect the inference part of the person perception process. If self-esteem is considered a motivational variable, then the Shrauger and Altrocchi hypothesis would predict its effect on the inferences made in these experiments. However, no such effect occurred. The reason for the lack of influence may lie in the paradigm used in these studies. It may be that self-esteem affects inference only when drive is more aroused than it was in these experiments.[9]

Berscheid and Walster (1969) suggested that a drive hypothesis could account for the relations between self esteem and interpersonal attraction in a situation where information is available about the other person's response to the perceiver. Under these conditions, low self-esteem persons, whose need for affection is greater, should like accepting others and dislike rejecting others more than would high self-esteem persons. Evidence from several studies supports the contention that when feedback from the perceived person is available, self-esteem, whether measured or manipulated, influences interpersonal attraction (Dittes, 1959; Jacobs, Berscheid & Walster, 1971, Walster, 1965). Jones (1973) reviews further evidence in support of the contention. In contrast, when there is no feedback from the perceived person available, Walster (1970) found measured self-esteem did not influence liking of stimulus persons. This result is

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[9]Although in Experiment I subjects anticipated meeting one of the stimulus persons, the fact that the results of this experiment were almost identical to those for Experiment II indicates that this was not an important difference between the two experiments.

consistent with the results of the two experiments conducted for this dissertation in which no feedback from the perceiver was available.

For self-esteem to influence interpersonal attraction, it may be necessary for feedback from the perceived person to be made available as it was in all three studies where influence occurred. However, it may be that self-esteem influences liking of a target person before an actual evaluation of the perceiver occurs if the target person is in a position to evaluate the perceiver. Studies of social facilitation of learning have shown that the presence of a person in a position to evaluate increases arousal even when there is no actual feedback of impressions (Martens, 1969). The social facilitation effect on learning, although not the arousal effect, has also been found when performance, with no other person physically present, was tape recorded for future evaluation (Henchy & Glass, 1968). Cottrell et al. (1968) suggested that the presence of others is a learned source of drive and is present when observers constitute an evaluative element in the situation.

If this analysis is correct, then self-esteem did not influence inference in the experiments of this study because motives related to self-esteem were not sufficiently salient. Anticipation of meeting one of the stimulus persons in Experiment I represented neither feedback from that other person nor an apparent evaluative presence in the situation. Whether the evaluative presence alone or in combination with actual evaluation is necessary for self-esteem to influence liking must be the subject of a future study.

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APPENDICES

APPENDIX A: Self-Esteem

APPENDIX B: Pilot Study of Stimulus Material

APPENDIX C: Stimulus Materials and Dependent Measures

APPENDIX D: Results

APPENDIX A

SELF-ESTEEM

Self-Esteem Scale: Development

Self-Esteem Scale as a Test of Self-Esteem

Self-Esteem Subject Groups

Assumptions Regarding Self-Esteem

Self-Esteem Scale: Development

A new scale consisting of 12 items about feelings toward the self was used to measure self-esteem. The scale was part of an earlier project in which it was hypothesized that an individual has a general feeling toward himself and that he also has a set of beliefs about his characteristics on which he evaluates himself. It was further hypothesized that for most people feelings about self and evaluation of certain self characteristics would be in the same direction and thus consistent, but for some people there would be inconsistency between feelings and evaluation of characteristics. For example, a person may feel positive toward himself (like himself) even though he knows that his academic ability is low. Or a person may dislike himself even though he gets along well socially and in his work. Both of these persons would be inconsistent in their feelings about themselves and their evaluation of some characteristics of themselves.

Scores

Responses to three sets of questions were correlated to determine whether persons who were inconsistent in their feelings and their evaluation of themselves could be identified.

A score. The responses to each of the 12 items of the self-esteem scale (Table A-1) were summed to make an A score for each of the 779 persons who completed the test.

E score. The responses to each of 29 items measuring evaluation of the self were summed to form an E score for each person.

EI score. Responses on the E scale were multiplied by the rating of importance for that item and the product was summed to form an EI score for each person.

Table A-1

SELF-ESTEEM SCALE as Presented to Subjects

This is a study of attitudes people have toward themselves. On the first page are listed feelings which you may have often, sometimes or almost never. Please read each statement carefully and answer on the IBM answer sheet according to the following rules:

1	2	3	4	5
Practically never	Once in a great while	Sometimes	Fairly Often	Very Often

1. How often do you feel unhappy?
2. How often do you feel that you don't care what happens to you?
3. How often do you feel really sure of yourself?
*4. Do you ever feel so discouraged with yourself that you wonder whether anything is worthwhile?
*5. How often do you feel inferior to most of the people you know?
6. How often do you feel glad that you are the person you are?
7. How often do you feel that you have a number of good qualities?
8. How often do you feel that you respect yourself?
9. How often do you feel that on the whole you are satisfied with yourself?
10. How often do you think that you are a worthless individual?
11. How often do you feel very happy?
12. How often do you wish that you were someone else?

*Note. Items 4. and 5. are taken from the Janis and Field (1959) Feelings of Inadequacy Scale.

Correlations. The main hypothesis was that A and E scores would correlate but that the correlation would not be high. This result would support the hypothesis that while some persons are consistent in their feelings about themselves and their self evaluation, others are inconsistent. However, all of the correlations between the scales were highly significant. Correlations are reported in Table A-2. Reliability studies were conducted in order to perform a correction for attenuation.

Table A-2

Correlations Between A, E, and EI Scores

		E	EI
A score	Males	.73	.58
	Females	.64	.58
	Total	.68	.58
E score	Males		.75
	Females		.80
	Total		.78

Split-Half Reliability

Split-half reliability was calculated by correlating the sum of responses to positively worded items on the self-esteem scale with the sum of responses to the negatively worded items. Split-half reliability for males only was r = -.58 (n = 383). In the same way split-half reliability was calculated for the evaluation score and for males was r = -.30 (n = 383).

Correction for Attenuation

This test indicated that the correlation between A and E scores would rise to 1.00 if there were no error in measurement. Thus it was finally shown that there was no evidence to support the hypothesis that some individuals are inconsistent in their evaluation of themselves and their feelings about themselves.

Self-Esteem Scale as a Test of Self-Esteem

Since the correlation between the A scale and E scale was high, further tests were carried out on the self-esteem scale with a view to using it as a measure of self-esteem.

Reliability and Validity

The scale consists of 12 items about feelings toward the self (Table A-1). Self-esteem was defined as a positive or negative affect toward the self. Six items on the scale were worded positively with a high score indicating a positive effect. Six items were worded negatively so that a high score reflected negative affect. Responses ranged from 1 (Practically never) to 5 (Very often). To form a score for each subject, responses for items worded negatively were reflected then all responses were summed for each subject so that a high score indicated positive feelings toward the self.

Table A-3

SELF-ESTEEM SCALE: Correlation of Each Item With the Sum. (N = 779)

Item Number	Correlation with sum
1	-.55
2	-.55
3	.64
4	-.63
5	-.57
6	.70
7	.63
8	.63
9	.68
10	-.63
11	.53
12	-.54

The Self-Esteem scale was found to be internally consistent with all items correlating more than .54 with the sum (Table A-3). Test-retest reliability with the time interval ranging from 3 weeks to 3 months yielded $r = .73$ ($n = 45$) for all subjects. For males only $r = .69$ ($n = 24$). Validity was tested by correlating the scale with another scale purporting to measure self-esteem and a scale not measuring self-esteem. For the scale measuring self-esteem, correlations with the Janis and Field (1959) Feelings of Inadequacy Scale, yielded $r = .66$ ($n = 176$, males and females). For the scale not measuring self-esteem, correlation with Rotter's (1966) Internal-External Control of Reinforcement Scale yielded $r = -.27$ ($n = 656$, males and females). The correlations differ significantly ($p < .01$), providing some support for the conclusion that the scale is a valid measure of feelings about the self referred to as self-esteem.

Self-Esteem Subject Groups

From the population of 330 males who completed the self-esteem

scale in September, 1972, high, moderate and low self-esteem groups were defined by taking approximately the upper, lower and middle 25% of the distribution of self-esteem scores. The distribution for the 330 males approximated the normal curve with $\bar{x}$ = 45.99, s = 6.16.

Subjects were then phoned and asked to participate in the experiment and the lists extended slightly to include a sufficient number of subjects in the study. Of those actually participating in the study whose data were used in the final analyses, Table A-4 presents the means, standard deviations of prior self-esteem, the percent of the distribution for each self-esteem group.

Table A-4

Self-Esteem Prior to Study of Those Actually Participating

	$\bar{x}$	s	% distribution
High Self-esteem	51.74	3.57	27
Moderate Self-esteem	45.96	1.32	26
Low Self-esteem	36.35	14.42	18

Assumptions Regarding Self-Esteem

It was assumed in making predictions regarding the effects of self-esteem on liking of persons with various levels of competence and friendliness, that high self-esteem persons rate themselves as friendly and competent while low self-esteem persons rate themselves as unfriendly and incompetent. Evidence in support of this assumption

is derived from a pilot study.

Subjects were defined as high or low self-esteem by their responses to the self-esteem scale described above. High self-esteem subjects were those whose score was in the upper 20% of the distribution while low self-esteem subjects were those whose score was in the lower 20% of the distribution. Random samples of 15 subjects from each of the groups were chosen for the test of the assumptions. Their responses to 7 questions from a different scale were recorded. Three of these questions measured self-rating of interpersonal relatedness (friendliness) and four questions measured self rating of competence. Mean responses to each of these questions were tested with a t test of the difference between means for high and low self-esteem groups. Tests of homogeneity of variance were conducted. All tests are two tailed. Results, presented in Table A-5 support the assumptions that high self-esteem subjects rate themselves significantly more competent and friendly than do low self-esteem subjects.

Table A-5

Self Ratings of Samples from High Self-esteem and Low Self-esteem on Items Testing Competence and Interpersonal Relatedness, Probability of Difference Between Means (t test), and Correlation of Self Ratings with Self-esteem.

Items Testing Self Ratings of Competence

	High Self-esteem	Low Self-esteem	p	r with SE
1. I have well developed abilities in some areas.	4.0	3.27	<.05	.34
2. I am poor at academic work.	1.47	2.13	<.02	-.29
3. What skills I have are poorly developed.	1.40	2.06	<.10	-.40
4. I usually fail at anything I try to accomplish.	1.07	1.73	<.05	-.45

Items Testing Self Rating of Interpersonal Relatedness

1. I am liked by most of the people who know me.	4.13	3.40	<.01	.33
2. I am shy.	2.33	4.06	<.01	-.40
3. I don't get along very well with other people.	1.47	2.40	<.01	-.33

APPENDIX B

PILOT STUDY OF STIMULUS MATERIAL

EXPERIMENT II

APPENDIX B

PILOT STUDY OF STIMULUS MATERIAL

EXPERIMENT II

Adjectives chosen from Anderson's (1968) list of personality trait words were judged to reveal competence or friendliness of the stimulus person by 21 subjects in a pilot study. From these ratings, the following list was derived for use in Experiment II. Adjectives were chosen to fit 4 categories of competence while being judged near zero on friendliness and others were chosen to fit 4 categories of friendliness while being rated near zero on competence. Table B-1 gives the list of adjectives used in Experiment II with their category of high (H), moderately positive (M+), moderately negative (M-), and low (L). Ratings of competence and friendliness of a person described by each adjective are the sums of responses of the 21 subjects in the pilot study. These ratings were made on a 9 point scale ranging from -4 to +4. Ratings of Likeableness are from Anderson (1968) and were made on a 7 point scale from 0 to 6. They represent the sum of ratings by 100 subjects.

TABLE B-1

Ratings of Competence and Friendliness from a Pilot Study and Ratings of Likeableness from Anderson (1968) for the 32 Personality Trait Words Used as Stimuli in Experiment II.

COMPETENT				FRIENDLY			
	C	F	L		C	F	L
BRILLIANT	50[b]	4	490	KIND	6	54	520
CLEVER	45	11	496	WARM	8	56	522
SELF-DISCIPLINED	42	10	491	KIND-HEARTED	3	52	514
INTELLIGENT	42	9	537	GOOD-HUMORED	9	48	507
DELIBERATE	26	3	345	SOFT-HEARTED	8	34	387
DIGNIFIED	24	-3	386	TALKATIVE	2	27	352
QUICK	19	5	373	SOFT-SPOKEN	-3	26	380
DEFINITE	23	8	375	GENTLE	4	40	503
UNSYSTEMATIC	-27	-4	253	EGOTISTICAL	-1	-32	116
CONFORMIST	-17	0	241	BOASTFUL	-11	-33	122
FRIVOLOUS	-20	3	237	DISSATISFIED	-1	-27	239
UNTIDY	-19	-4	175	UNPOPULAR	-5	-18	222
LAZY	-46	-9	126	BOSSY	-9	-52	112
FORGETFUL	-36	0	224	GROUCHY	-8	-44	117
UNDECIDED	-34	-5	249	HARD-HEARTED	0	-42	107
UNINQUISITIVE	-33	-5	225	IRRITATING	-5	-41	118

Note a. C means Competence rating of a person described by that adjective, F means Friendliness, L means Likeableness.

b. A higher score indicates greater competence, friendliness, likeableness.

APPENDIX C

STIMULUS MATERIAL AND DEPENDENT MEASURES

Stimulus Material Experiment I

Anchor Interview

High competent - Low friendly

Low competent - High friendly

Low competent - Low friendly

High competent - High friendly

Dependent Measures Experiment I

Stimulus Material and Dependent Measures Experiment II

STIMULUS MATERIAL · EXPERIMENT I

Anchor Interview

Interviewer: I've turned on the tape recorder now.

Response: Yes, so we're on tape now.

I: Yes, well now, can you tell me something about yourself so our audience will get to know you. What are you studying?

R: I'm an honors student in Psychology.

I: Do you find it difficult?

R. Well, difficult enough to be quite a challenge. At first I thought Psychology was pretty simple. Introductory was pretty easy. But then I took a course in Physiological Psychology and that was a real challenge and I liked it.

I: Have you been interested in Psychology for a long time?

R: I've been interested in people for a long time. Psychology really became interesting with that Physiological course. I got interested in the physiology of sleep cuz I like to sleep a lot. I read everything I could get my hands on. There's been a lot of research recently but they still don't know what happens in the brain when you go to sleep.

I: Are you satisfied with the direction your life is taking?

R: I think so. Psychology seems like a good place for me. I plan to go into graduate studies next year. I still don't know which area would appeal to me most but there's time to made that decision later.

I: Besides Psychology, what interests do you have?

R: Well, I'm keen on sports, especially tennis and skiing. And my sideline is Canadian politics. I've been teaching a course on it at Free University North this year and with the election we've had a lot to talk about.

I: Could you tell me something in general about your friends?

R: Well, I don't think my friends have any characteristics that are general to all of them. They're all individuals. And they have a real variety of interests. I've met a lot of people since I came to University, especially through sports and then in classes and through other people. There's a small group I see often and then a lot of other people.

I: You've had a good time then at University?

R: Oh, definitely. There's always something going on and lots of people who are interested in some of the same things that I am.

I: Would you say you generally like people?

R: Oh yes, I generally like people and I like to meet new people.

I: O.K., that's all the questions. Thanks a lot.

High Competent - Low Friendly

I: I've turned the tape recorder on now.

R: Oh yes, so I see.

I: Well, can you tell me about your studies?

R: I'm in Science. I'm majoring in Math. and Physics.

I: How do you find your courses?

R: Oh, most of them are pretty good. I've always liked Math. but it's still a lot of work. My other courses, Chem. and Physics, they're OK too. The labs are especially good. You learn a lot in the labs.

I: Would you say it's a difficult program of studies?

R: Well, yes, I guess it is. I find it quite a lot of work. It really keeps me going just to finish reports and assignments and then my schedule is pretty full.

I: How does it compare with high school?

R: Oh, no comparison. High school was pretty much of a snap. Oh, I studied a bit because I knew I was coming to University and I wanted to have pretty fair grades but nothing like I do now. They really expect you to work around here.

I: And do you think it's worthwhile work, I mean for your long term benefit?

R: Yes, definitely. Sometimes I think a report or an assignment isn't very meaningful but overall I think it's a good way to learn. In the long run I hope to get a good job and I want to know what I'm doing.

I: How do you find the social life here at University?

R: Well, kind of dull frankly. It's pretty hard to break into any groups. Everybody seems to know lots of others, maybe from high school. I hardly knew anybody when I came and it's not much better now.

I: You've not had a good time then at University?

R: Oh, not really. Sometimes I've gone to a party and had a pretty fair time but it never seems to last. I mean you don't really get to know people.

I: Is it a lot different from high school for you?

R: Well, in some ways. At least there were sort of organized things at high school that you could go to, that you were expected to be at. And usually you knew almost everybody there. Here you're really on your own.

I: What sort of social activities have you liked - in high school?

R: Oh, I used to belong to clubs and then I went to movies a lot. There were some guys who almost always went to the movies and I'd go too.

I: Do you generally like to have one or two friends or a lot of people?

R: Well, I wouldn't mind having more friends, but as I say, it's hard to get into any groups. People are too cliquey.

I: Do you think you make friends easily or slowly?

R: Oh, I don't make friends fast. It takes me quite a long time to trust people. I've only ever had one or two friends and they're not here at University. The one guy I know who came here is always in the middle of a group and he never invites me in to meet his friends.

I: O.K. That's all for now. Thanks a lot.

Low Competent - High Friendly

I: I've turned on the tape recorder now.

R: O.K.

I: Well, can you tell me about your studies?

R: You mean like that I'm in Arts?

I: Yes, what are you majoring in?

R: I'm in English mostly, right now but I may have to change.

I: Oh, why is that?

R: Well, I don't seem to get very good grades. Last year I did O.K. in English, I mean I did better than a pass, but this year both my English profs are on my neck. Essays aren't organized right, grammar is poor, spelling mistakes. You name it.

I: Would you say your courses are difficult, more so than high school?

R: Well, I think there's a lot more work to do, more reading and essays, But they expect you to do better somehow than I can seem to. Yeah, it's a lot harder to make grades here than it was in high school. I mean I wasn't the top student but I did O.K. Here I don't even know if I'll make my year.

I: Do you have long term plans?

R: Well, I thought I might finish in Arts and then take Education but maybe I won't even finish Arts. I mean you've got to do something you can do and maybe I should be in something else. I thought about business, Commerce I mean, but the Math scares me. I never could do Math. Well, I don't know, I'll just see how it goes I guess.

R: How do you find the social life at University?

I: Pretty good. I've had a pretty good time the last couple of years. Of course, you can't take in everything but I like all the variety of social activities here. I'm from a smaller community and we pretty well had only one thing to choose from at a time. Mostly it was curling there too.

I: What things in particular do you like?

R: Well, I like to watch sports - football games, basketball, hockey, I play hocky too, so I've been a fan for years. And then there's always parties on weekends. And the list of shows is overwhelming for a small town boy.

I: Would you say you have a lot of friends?

R: Oh, quite a few anyway. There's a crowd from my home town and we've met quite a few others. We usually get together on weekends at least. And then I see some of the crowd in classes and for lunch.

I: You make friends easily then?

R: Well, I don't know. I like people mostly. There's always some groups around and I like groups of people.

I: Do you prefer groups of people to having individuals for company?

R: Oh, it depends. I like both kinds of company. I suppose I'm more of a group person than some others. I like crowds. Football games, everybody yelling, that sort of thing.

I: O.K. Thanks, that's all the questions.

Low Competent - Low Friendly

I: I've turned on the tape recorder now.

R: Oh, O.K.

I: Can you tell me something about your studies?

R: Well, I'm in Science - taking Chemistry and Physics courses.

I: What is your major?

R: Well, I'm supposed to be in Chem. but I'm not sure that I should be. I can't seem to make the grades in Chem.

I: You have trouble with it?

R: Well, I almost flunked my course last year and this year I'm not getting the marks I need. So maybe I should get into something else but I don't know what yet.

I: How do your classes here compare with high school?

R: Oh, they're tougher all right. High school I did O.K. in Chem. - not extra special or anything but O.K. And I liked it, so I thought it would be a good thing to take. But all the courses are tougher, especially this year. I'm not the world's best student but I thought I could make it. Now I'm not so sure.

I: What do you think you will do in the long run, do you have plans?

R: Well, not really. I just wanted to come to University. Everybody else was coming and then my parents wanted me to. I've thought of maybe getting a job in industry or teaching but now I don't know. Maybe I won't even pass this year.

I: What other interests might you have?

R: You mean what else would I like to do? Well, I don't know. You know, you get yourself set in one direction and it's pretty hard to change. I'll stick to this for awhile and then I'll see. Maybe I just haven't put in enough effort. I can't study for long hours at a time like some guys do.

I: Well, how do you find social life at University?

R: Oh, it's O.K., I guess.

I: How does it compare with high school?

R: Oh, it's quite a lot harder to meet people here, I find. I didn't know too many at high school but there was always a group, you know, kids from the neighborhood. But here there's nobody from home, at least not that I see.

I: Would you say social life has been slow for you the past couple of years?

R: Well, yes, I guess so. I have spent a lot of time at my studies and I guess I don't have much left over for other things. I'd like to do more but ....

I: What sort of social activities do you like - have you liked in the past?

R: Oh, just having coffee with a friend or going to shows. I'm not much good at parties. I don't seem to ever be able to say the right things. I met one guy who goes to parties a lot and he wanted me to come along but - well, I don't know..., it's pretty hard for me.

I: You prefer one or two people for company instead of a large group?

R: Oh, yes, I like to go for coffee or beer with one or two guys sometimes. Sometimes I like to go to shows. Well that's about what there is to my social life.

I: O.K., I think that's all the questions. Thanks.

High Competent - High Friendly

I: I've turned the tape recorder on now.

R: Oh, yes, O.K.

I: Well, can you tell me something about your studies?

R: Yes, I'm in second year arts, majoring in History.

I: How do you find your courses?

R: Well, they're all a lot of work but I like them all. I'm taking 3 history courses, a political science and an economics. There's a lot of information to absorb. I read several books a week and still there's more and of course there are lots of papers. But for the first time I really feel challenged to do a job.

I: How does University compare with high school?

R: Well, I found high school pretty easy frankly. I never did do a lot of work there. I read about history because I liked to but never really studied it like you have to do here. I found it quite a struggle at first to get through so much material and to make some sense of it all but one of my profs especially really makes you think and I seem to be making some sort of progress.

I: Do you have long term plans?

R: Well, I'm not sure which direction I'll go. Probably if my grades are good enough I'll go on to graduate work. I might try to get some sort of job to do with history before that though. There are some jobs with the City and with the Province that would be pretty interesting and right along my line. Looking into the history of the province, that sort of thing.

I: Well, now how do you find the social life at University.

R: Pretty good, well, it's been getting so I don't have time to study any more - guess I'll have to cut out something.

I: Would you say you've had a good time socially at University?

R: Well, social life has its ups and downs but generally I have had a good time. I know quite a few people now and there's always something happening.

I: What things in particular do you like?

R: Well, I belong to a couple of clubs on campus where we have discussions and that sort of thing. And then I've been going to quite a number of parties lately.

I: Would you say you have a lot of friends?

R: Well, quite a lot. I like people usually and I like to have lots around. There a number of guys I've known all through school that are here at University and we're all in different courses so we all meet others. Sometimes we have big parties where everybody brings some others. You meet lots that way.

I: You make friends easily then?

R: Yes, I think so. I've never been in a place that I didn't already know lots though.

I: Do you prefer individuals for company or groups of people?

R: Oh, I think both. I like a really big party so you can meet people and generally have a great time. And then I like just a date or a few beer with the guys too.

I: O.K., thanks, I think that's all the questions.

EXPERIMENT I

SAMPLE PAGE OF DEPENDENT MEASURES

Rate this person on each of the following characteristics:

	Not at all characteristic of him	Extremely Characteristic of him
COURTEOUS	_____	
COMPETENT	_____	
COLD	_____	
PLEASANT	_____	
EFFICIENT	_____	
UNFRIENDLY	_____	
DISCOURTEOUS	_____	
UNPLEASANT	_____	
GOOD-NATURED	_____	
INCOMPETENT	_____	
OUTSTANDING	_____	
FRIENDLY	_____	
DULL	_____	
INEFFICIENT	_____	

How much do you feel that you would like this person?

LIKE HIM VERY MUCH _____ DISLIKE HIM EXTREMELY

How much do you think this person would like you?

LIKE ME VERY MUCH _____ DISLIKE ME EXTREMELY

EXPERIMENT II

SAMPLE PAGE OF STIMULUS MATERIAL AND DEPENDENT MEASURES

Source 1: Systematic Sincere

Source 2: Outstanding Considerate

Rate this person on each of the following characteristics:

	Not at all characteristic of him							Extremely Characteristic of him
COURTEOUS								
COMPETENT								
COLD								
PLEASANT								
EFFICIENT								
UNFRIENDLY								
DISCOURTEOUS								
UNPLEASANT								
GOOD-NATURED								
INCOMPETENT								
OUTSTANDING								
FRIENDLY								
DULL								
INEFFICIENT								

How much do you feel that you would like this person?

LIKE HIM VERY MUCH							DISLIKE HIM EXTREMELY

How much do you think this person would like you?

LIKE ME VERY MUCH							DISLIKE ME EXTREMELY

APPENDIX D

RESULTS

SUMMARIES OF ANALYSES OF VARIANCE

Table D-1 Liking ratings - Experiment I
Table D-2 Liking ratings - Experiment II
Table D-3 Total Evaluation - Experiment I
Table D-4 Total Evaluation - Experiment II
Table D-5 Competence Ratings - Experiment I
Table D-6 Competence Ratings - Experiment II
Table D-7 Friendliness Ratings - Experiment I
Table D-8 Friendliness Ratings - Experiment II
Table D-9 Anticipated Liking - Experiment I
Table D-10 Anticipated Liking - Experiment II

MEAN RATINGS

Table D-11 Liking - Experiment I
Table D-12 Liking - Experiment II
Table D-13 Total Evaluation - Experiment I
Table D-14 Total Evaluation - Experiment II
Table D-15 Competence - Experiment I
Table D-16 Competence - Experiment II
Table D-17 Friendliness - Experiment I
Table D-18 Friendliness - Experiment II
Table D-19 Anticipated Liking - Experiment I
Table D-20 Anticipated Liking - Experiment II
Table D-21 t tests, differences between mean Liking ratings by subjects who received Credit versus Money for participation in Experiments I and II.
Table D-22 Summary of analysis of variance: Positive scores of self rating (Post experiment).
Table D-23 Mean Positive scores for self rating (Post experiment).

TABLE D-1

EXPERIMENT I

SUMMARY OF ANALYSIS OF VARIANCE OF LIKING RATINGS

Source	df	Mean Square	F
SELF-ESTEEM (SE)	2	427.73	0.87
GROUPS within Self-Esteem G(SE)	18	493.42	1.58
SUBJECTS within Groups S(G)	48	312.61	
COMPETENT (C)	1	1206.97	6.20*
SE x C	2	46.28	0.24
G(SE) x C	18	194.52	0.92
S(G) x C	48	212.31	
FRIENDLY (F)	1	6134.73	35.11***
SE x F	2	187.92	1.08
G(SE) x F	18	174.74	0.57
S(G) x F	48	308.23	
C x F	1	170.75	1.04
SE x C x F	2	13.65	0.08
G(SE) x C x F	18	164.75	1.15
S(G) x C x F	48	142.92	

* $p < .05$

*** $p < .005$

TABLE D-2

EXPERIMENT II

SUMMARY OF ANALYSIS OF VARIANCE OF LIKING RATINGS

Source	df	Mean Square	F
SELF-ESTEEM (SE)	2	614.27	1.25
GROUPS within Self-Esteem G(SE)	18	490.48	0.53
SUBJECTS within Groups S(G)	48	920.54	
COMPETENT (C)	3	4523.53	19.22***
SE x C	6	310.69	1.32
G(SE) x C	54	235.36	1.76**
S(G) x C	144	133.66	
FRIENDLY (F)	3	106572.37	256.66***
SE x F	6	108.66	0.26
G(SE) x F	54	415.22	1.36
S(G) x F	144	305.17	
C x F	9	316.54	2.67**
SE x C x F	18	144.66	1.22
G(SE) x C x F	162	118.43	0.90
S(G) x C x F	432	131.32	

** $p < .01$

*** $p < .005$

TABLE D-3

EXPERIMENT I

SUMMARY OF ANALYSIS OF VARIANCE OF TOTAL EVALUATION

Source	df	Mean Square	F
SELF-ESTEEM (SE)	2	65,668.04	1.74
GROUPS within Self-Esteem G(SE)	18	37,753.99	0.98
SUBJECTS within Groups S(G)	48	38,511.60	
COMPETENT (C)	1	443,578.54	28.17***
SE x C	2	4,766.01	0.30
G(SE) x C	18	15,748.87	1.52
S(G) x C	48	10,359.52	
FRIENDLY (F)	1	540,698.70	48.69***
SE x F	2	26,290.97	2.37
G(SE) x F	18	11,105.75	0.73
S(G) x F	48	15,310.45	
C x F	1	99,612.16	12.18***
SE x C x F	2	1,665.12	0.20
G(SE) x C x F	18	8,181.57	1.24
S(G) x C x F	48	6,610.85	

*** $p < .005$

TABLE D-4

EXPERIMENT II

SUMMARY OF ANALYSIS OF VARIANCE OF TOTAL EVALUATION

Source	df	Mean Square	F
SELF-ESTEEM (SE)	2	68,290.78	1.56
GROUPS within Self-Esteem G(SE)	18	43,777.88	0.77
SUBJECTS within Groups S(G)	48	56,505.58	
COMPETENT (C)	3	2,076,516.32	135.08***
SE x C	6	5,735.80	0.37
G(SE) x C	54	15,372.56	1.16
S(G) x C	144	13,288.22	
FRIENDLY (F)	3	12,256,392.29	261.29***
SE x F	6	23,077.76	0.49
G(SE) x F	54	46,907.94	1.30
S(G) x F	144	36,033.48	
C x F	9	34,539.64	4.34***
SE x C x F	18	5,157.31	0.65
G(SE) x C x F	162	7,951.03	1.14
S(G) x C x F	432	6,953.45	

*** $p < .005$

TABLE D-5

EXPERIMENT I

SUMMARY OF ANALYSIS OF VARIANCE OF COMPETENCE RATINGS

Source	df	Mean Square	F
SELF-ESTEEM (SE)	2	10,164.54	2.00
GROUPS within Self-Esteem G(SE)	18	5,086.55	0.63
SUBJECTS within Groups S(G)	48	8,055.15	
COMPETENT (C)	1	393,163.57	54.11***
SE x C	2	105.56	0.01
G(SE) x C	18	7,266.07	1.45
S(G) x C	48	5,019.65	
FRIENDLY (F)	1	42,550.93	12.86***
SE x F	2	6,495.24	1.96
G(SE) x F	18	3,319.10	0.67
S(G) x F	48	4,938.81	
C x F	1	3,825.42	3.16
SE x C x F	2	3,485.17	2.88
G(SE) x C x F	18	1,211.42	0.60
S(G) x C x F	48	2,027.61	

*** $p < .005$

TABLE D-6

EXPERIMENT II

SUMMARY OF ANALYSIS OF VARIANCE OF COMPETENCE RATINGS

Source	df	Mean Square	F
SELF-ESTEEM (SE)	2	8,610.11	0.71
GROUPS with Self-Esteem G(SE)	18	12,130.64	0.86
SUBJECTS within Groups S(G)	48	14,116.33	
COMPETENT (C)	3	1,594,275.30	190.20***
SE x C	6	3,868.79	0.46
G(SE) x C	54	8,382.27	1.16
S(G) x C	144	7,201.97	
FRIENDLY (F)	3	396,195.21	89.47***
SE x F	6	6,165.47	1.39
G(SE) x F	54	4,428.17	0.75
S(G) x F	144	5,878.27	
C x F	9	12,290.54	4.84***
SE x C x F	18	1,878.69	0.74
G(SE) x C x F	162	2,538.52	1.04
S(G) x C x F	432	2,442.55	

*** $p < .005$

TABLE D-7

EXPERIMENT I

SUMMARY OF ANALYSIS OF VARIANCE OF FRIENDLINESS RATINGS

Source	df	Mean Square	F
SELF-ESTEEM (SE)	2	24,213.26	1.20
GROUPS within Self-Esteem G(SE)	18	20,195.39	1.22
SUBJECTS within Groups S(G)	48	16,595.46	
COMPETENT (C)	1	1,520.17	0.30
SE x C	2	5,779.19	1.15
G(SE) x C	18	5,038.27	1.13
S(G) x C	48	4,463.95	
FRIENDLY (F)	1	279,886.92	50.77***
SE x F	2	8,020.81	1.45
G(SE) x F	18	5,513.10	0.99
S(G) x F	48	5,562.65	
C x F	1	64,396.14	13.68***
SE x C x F	2	335.17	0.07
G(SE) x C x F	18	4,708.21	1.89*
S(G) x C x F	48	2,495.60	

* $p < .05$

*** $p < .005$

TABLE D-8

EXPERIMENT II

SUMMARY OF ANALYSIS OF VARIANCE OF FRIENDLINESS RATINGS

Source	df	Mean Square	F
SELF-ESTEEM (SE)	2	26,998.16	1.65
GROUPS with Self-Esteem G(SE)	18	16,328.11	0.78
SUBJECTS within Groups S(G)	48	20,820.60	
COMPETENT (C)	3	47,109.80	12.33***
SE x C	6	2,962.34	0.78
G(SE) x C	54	3,820.54	1.05
S(G) x C	144	3,627.40	
FRIENDLY (F)	3	8,240,247.85	285.70***
SE x F	6	17,432.51	0.60
G(SE) x F	54	28,841.86	1.58*
S(G) x F	144	18,307.67	
C x F	9	27,745.15	7.57***
SE x C x F	18	2,855.68	0.78
G(SE) x C x F	162	3,666.42	1.22
S(G) x C x F	432	3,002.91	

* $p < .05$

** $p < .01$

*** $p < .005$

TABLE D-9

EXPERIMENT I

SUMMARY OF ANALYSIS OF VARIANCE OF ANTICIPATED LIKING

Source	df	Mean Square	F
SELF-ESTEEM (SE)	2	236.71	0.55
GROUPS within Self-Esteem G(SE)	18	427.04	1.54
SUBJECTS within Groups S(G)	48	277.12	
COMPETENT (C)	1	405.95	4.06
SE x C	2	131.32	1.31
G(SE) x C	18	99.98	0.64
S(G) x C	48	154.96	
FRIENDLY (F)	1	3,593.21	10.02**
SE x F	2	557.56	1.55
G(SE) x F	18	358.49	1.01
S(G) x F	48	353.50	
C x F	1	81.58	0.63
SE x C x F	2	14.04	0.11
G(SE) x C x F	18	129.78	1.06
S(G) x C x F	48	121.92	

** $p < .01$

TABLE D-10

EXPERIMENT II

SUMMARY OF ANALYSIS OF VARIANCE OF ANTICIPATED LIKING

Source	df	Mean Square	F
SELF-ESTEEM (SE)	2	1,256.55	2.43
GROUPS within Self-Esteem G(SE)	18	516.70	0.44
SUBJECTS within Groups S(G)	48	1,187.05	
COMPETENT (C)	3	1,561.55	6.14***
SE x C	6	172.05	0.68
G(SE) x C	54	254.38	1.78
S(G) x C	144	142.82	
FRIENDLY (F)	3	78,597.16	168.34***
SE x F	6	103.66	0.22
G(SE) x F	54	466.91	1.40
S(G) x F	144	333.57	
C x F	9	432.31	2.48**
SE x C x F	18	136.35	0.78
G(SE) x C x F	162	173.98	1.03
S(G) x C x F	432	168.34	

** $p < .01$

*** $p < .005$

TABLE D-11

EXPERIMENT I: MEAN RATING OF LIKING

(A low score = greater liking)

		HF	LF	$\bar{X}$
HIGH SELF-ESTEEM	HC	25.00	37.83	31.41
	LC	33.57	43.57	38.57
	$\bar{X}$	29.28	40.70	
MODERATE SELF-ESTEEM	HC	32.17	42.57	37.37
	LC	38.78	43.17	40.98
	$\bar{X}$	35.48	42.87	
LOW SELF-ESTEEM	HC	28.13	39.09	33.61
	LC	34.49	42.04	38.22
	$\bar{X}$	31.26	40.57	

FRIENDLY

		HL	LF	$\bar{X}$
COMPETENT	HC	28.43	39.83	34.13
	LC	35.58	42.93	39.25
	$\bar{X}$	32.01	41.38	

TABLE D-12

EXPERIMENT II: MEAN RATINGS OF LIKING

(A low score = greater liking)

		HF	M+F	M-F	LF	$\bar{X}$
HIGH SELF-ESTEEM	HC	16.65	20.39	50.43	52.13	34.90
	M+C	19.52	24.52	51.52	58.43	38.50
	M-C	29.96	31.26	60.91	65.30	46.86
	LC	25.96	30.61	63.83	66.09	46.62
	$\bar{X}$	23.02	26.70	56.67	60.49	
MODERATE SELF-ESTEEM	HC	20.78	26.48	57.43	59.13	40.96
	M+C	25.65	31.43	53.78	56.26	41.78
	M-C	26.30	29.17	59.17	65.22	44.97
	LC	26.30	26.61	61.91	64.87	44.92
	$\bar{X}$	24.76	28.42	58.08	61.37	
LOW SELF-ESTEEM	HC	15.61	20.57	60.43	63.91	40.13
	M+C	23.13	30.13	59.13	62.13	43.63
	M-C	30.00	31.96	54.61	68.47	46.26
	LC	33.00	29.74	63.26	67.26	48.32
	$\bar{X}$	25.43	28.10	59.36	65.45	

FRIENDLY

		HF	M+F	M-F	LF	$\bar{X}$
COMPETENT	HC	17.68	22.48	56.10	58.39	38.66
	M+C	22.77	28.70	54.81	58.94	41.30
	M-C	28.75	30.80	58.23	66.33	46.03
	LC	28.42	28.99	63.00	66.07	46.62
	$\bar{X}$	24.41	27.74	58.04	62.43	

TABLE D-13

EXPERIMENT I: MEAN RATING OF TOTAL EVALUATION

		HF	LF	$\bar{X}$
HIGH SELF-ESTEEM	HC	296.52	131.91	214.22
	LC	185.13	86.61	135.87
	$\bar{X}$	240.83	109.26	
MODERATE SELF-ESTEEM	HC	222.35	110.22	166.28
	LC	93.26	60.09	76.67
	$\bar{X}$	157.80	85.15	
LOW SELF-ESTEEM	HC	255.61	137.22	196.41
	LC	155.65	92.87	104.26
	$\bar{X}$	185.63	115.04	

FRIENDLY

		HL	LF	$\bar{X}$
COMPETENT	HC	258.16	126.45	192.30
	LC	131.35	79.86	105.60
	$\bar{X}$	194.75	103.15	

TABLE D-14

EXPERIMENT II: MEAN RATINGS OF TOTAL EVALUATION

		HF	M+F	M-F	LF	$\bar{X}$
HIGH SELF-ESTEEM	HC	413.27	333.26	41.09	-1.17	196.61
	M+C	341.22	302.91	-1.35	-95.43	136.84
	M-C	207.96	190.13	-102.70	-189.43	26.49
	LC	193.70	178.13	-188.74	-265.43	-20.59
	$\bar{X}$	289.03	251.11	-62.92	-137.87	
MODERATE SELF-ESTEEM	HC	345.74	282.43	-6.04	-40.30	145.46
	M+C	293.43	224.78	-54.70	-91.35	93.04
	M-C	172.91	164.22	-132.87	-222.57	-4.58
	LC	149.00	158.04	-166.13	-276.09	-33.79
	$\bar{X}$	240.27	207.37	-89.93	-157.58	
LOW SELF-ESTEEM	HC	398.09	299.26	6.65	-92.96	152.76
	M+C	300.74	262.48	-18.83	-123.87	105.13
	M-C	213.74	193.78	-67.78	-214.74	31.25
	LC	173.39	197.09	-172.91	-283.96	-21.60
	$\bar{X}$	271.49	238.15	-63.22	-178.88	

FRIENDLY

		HF	M+F	M-F	LF	$\bar{X}$
COMPETENT	HC	385.70	304.99	13.90	-44.81	164.94
	M+C	311.80	263.39	-24.96	-103.55	111.67
	M-C	198.20	182.71	-101.12	-208.91	17.72
	LC	172.03	177.75	-175.93	-275.16	-25.16
	$\bar{X}$	266.93	232.21	-72.03	-158.11	

TABLE D-15

EXPERIMENT I: MEAN RATINGS OF COMPETENCE

		HF	LF	$\bar{X}$
HIGH SELF-ESTEEM	HC	104.78	61.04	82.91
	LC	- 23.48	-22.43	0.52
	$\bar{X}$	64.13	19.30	
MODERATE SELF-ESTEEM	HC	73.78	51.52	62.65
	LC	-14.43	-27.61	-21.02
	$\bar{X}$	29.67	11.96	
LOW SELF-ESTEEM	HC	83.26	52.65	67.96
	LC	-5.17	1.91	-1.63
	$\bar{X}$	39.04	27.28	

FRIENDLY

		HF	LF	$\bar{X}$
COMPETENT	HC	87.27	55.07	71.17
	LC	1.29	-16.04	-7.38
	$\bar{X}$	44.28	19.51	

TABLE D-16

EXPERIMENT II: MEAN RATINGS OF COMPETENCE

		HF	M+F	M-F	LF	$\bar{X}$
HIGH SELF-ESTEEM	HC	170.87	131.17	105.96	110.30	129.58
	M+C	107.48	112.91	48.96	37.83	76.79
	M-C	-14.65	-1.91	-46.22	-65.61	-32.10
	LC	-1.04	-24.04	-53.70	-96.70	-43.87
	$\bar{X}$	65.66	54.53	13.75	-3.54	
MODERATE SELF-ESTEEM	HC	144.83	115.48	67.48	94.09	105.47
	M+C	102.65	93.26	11.65	37.30	61.22
	M-C	-6.87	1.35	-58.61	-83.26	-36.85
	LC	-20.22	-20.43	-62.74	-110.83	-53.55
	$\bar{X}$	55.10	47.41	-10.55	-15.67	
LOW SELF-ESTEEM	HC	170.65	121.39	68.26	54.91	103.80
	M+C	102.04	98.04	3.13	1.83	51.26
	M-C	11.78	12.13	-30.91	-62.57	-17.39
	LC	-17.78	-2.87	-68.91	-106.39	-48.99
	$\bar{X}$	66.67	57.17	-7.10	-28.05	

FRIENDLY

		HF	M+F	M-F	LF	$\bar{X}$
COMPETENT	HC	162.12	122.68	80.57	86.43	112.95
	M+C	104.06	101.41	21.25	25.65	63.09
	M-C	-3.25	3.86	-45.24	-70.48	-28.78
	LC	-13.01	-15.78	-61.78	-104.64	-48.80
	$\bar{X}$	62.48	53.04	-1.30	-15.76	

TABLE D-17

EXPERIMENT I: MEAN RATING OF FRIENDLINESS

		HF	LF	$\bar{X}$
HIGH SELF-ESTEEM	HC	191.74	70.87	131.30
	LC	161.65	109.04	135.35
	$\bar{X}$	176.70	89.96	
MODERATE SELF-ESTEEM	HC	148.57	58.70	103.63
	LC	107.70	87.70	97.70
	$\bar{X}$	128.13	73.20	
LOW SELF-ESTEEM	HC	172.35	84.57	128.46
	LC	120.83	90.96	105.89
	$\bar{X}$	146.47	87.76	

FRIENDLY

		HF	LF	$\bar{X}$
COMPETENT	HC	170.88	71.38	121.13
	LC	130.06	95.90	112.98
	$\bar{X}$	150.47	83.64	

TABLE D-18

EXPERIMENT II: MEAN RATINGS OF FRIENDLINESS

		HF	M+F	M-F	LF	$\bar{X}$
HIGH SELF-ESTEEM	HC	242.39	202.09	-64.87	-111.48	67.03
	M+C	233.74	190.00	-50.30	-133.26	60.04
	M-C	222.61	184.74	-56.48	-126.35	56.13
	LC	194.74	202.17	-135.04	-168.74	23.38
	$\bar{X}$	223.37	194.75	-76.67	-134.96	-
MODERATE SELF-ESTEEM	HC	200.91	166.96	-73.52	-134.39	39.99
	M+C	190.78	131.52	-66.35	-128.65	31.83
	M-C	179.78	162.87	-71.22	-139.30	33.03
	LC	169.22	178.48	-103.39	-165.26	19.76
	$\bar{X}$	185.17	159.96	-78.62	-141.90	
LOW SELF-ESTEEM	HC	227.43	177.89	-61.61	-147.87	48.96
	M+C	198.70	164.43	-21.96	-125.70	53.87
	M-C	201.96	181.65	-36.87	-152.17	48.64
	LC	191.17	199.96	-104.00	-177.57	27.39
	$\bar{X}$	204.82	180.98	-56.11	-150.83	

FRIENDLY

		HF	M+F	M-F	LF	$\bar{X}$
COMPETENT	HC	223.58	182.30	-66.67	-131.25	51.99
	M+C	207.74	161.99	-46.20	-129.20	48.58
	M-C	201.45	176.42	-54.86	-139.28	45.93
	LC	185.04	193.54	-114.14	-170.52	23.48
	$\bar{X}$	204.45	178.56	-70.47	-142.56	

TABLE D-20

EXPERIMENT II: MEAN RATINGS OF ANTICIPATED LIKING

(A low score = greater liking)

		HF	M+F	M-F	LF	$\bar{X}$
HIGH SELF-ESTEEM	HC	21.13	19.22	51.74	54.70	36.70
	M+C	21.04	24.70	46.61	57.22	37.39
	M-C	28.83	30.96	58.70	61.35	44.96
	LC	24.91	27.09	55.65	58.91	41.64
	$\bar{X}$	23.98	25.49	53.17	58.04	
MODERATE SELF-ESTEEM	HC	26.43	27.09	56.30	56.74	41.64
	M+C	27.48	34.17	54.13	54.30	42.52
	M-C	27.87	27.83	55.30	62.83	43.46
	LC	30.61	26.39	57.13	63.83	44.49
	$\bar{X}$	28.10	28.87	55.72	59.42	
LOW SELF-ESTEEM	HC	25.96	28.04	59.00	60.00	43.25
	M+C	23.96	36.00	52.09	56.61	42.16
	M-C	33.48	37.26	52.83	60.30	45.97
	LC	31.04	28.09	58.26	60.00	44.35
	$\bar{X}$	28.61	32.35	55.54	59.23	

FRIENDLY

		HF	M+F	M-F	LF	$\bar{X}$
COMPETENT	HC	24.51	24.78	55.68	57.14	40.53
	M+C	24.16	31.62	50.94	56.04	40.69
	M-C	30.06	32.01	55.61	61.49	44.79
	LC	28.86	27.19	57.01	60.91	43.49
	$\bar{X}$	26.89	28.90	54.81	58.90	

TABLE D-21

t Tests of Differences Between Mean Liking Ratings by Subjects Who Received Credit Versus Money for Participation in Experiments I and II.

		Mean for Subjects Receiving Credit N-19	Mean for Subjects Receiving Money N-47	t_a
EXPERIMENT I	C	66.95	70.34	0.54
	I	76.11	79.51	0.52
	F	60.42	66.45	0.81
	U	82.63	83.40	0.12
EXPERIMENT II	C	335.05	306.64	1.03
	I	365.84	356.21	0.29
	F	214.05	197.12	0.71
	U	489.31	485.78	0.14

Note a. None of the t test values is significant. Degrees of freedom = 64.

b. C = the sum of HC and M+C ratings for each subject.

I = the sum of LC and M-C ratings.

F = the sum of HF and M+F ratings.

U = the sum of LF and M-F ratings.

TABLE D-22

SUMMARY OF ANALYSIS OF VARIANCE: POSITIVE SCORES OF SELF RATING

(Post Experiment self rating)

Source	df	Mean Square	F
SELF-ESTEEM	1	26,752.38	6.58*
SUBJECTS within	40	4,067.48	

* $p < .05$

TABLE D-23

MEAN: POSITIVE SCORES OF SELF RATING

(Post Experiment self rating)

	High self-esteem	Low self-esteem
$\bar{x}$	435.00	384.52

TABLE D-24

SUMMARY OF ANALYSIS OF VARIANCE OF ABSOLUTE DIFFERENCES:

EXPERIMENT I - FRIENDLINESS

Source	df	Mean Square	F
SELF-ESTEEM (SE)	2	7,302.33	0.27
GROUPS within SE	18	26,951.23	1.49
SUBJECTS within Groups S(G)	42	18,081.60	
FRIENDLY-UNFRIENDLY (FR)	1	126,761.05	13.00***
SE x FR	2	5,786,63	0.59
G(SE) x FR	18	9,747.70	1.08
S(G) x FR	42	9,002.63	

*** $p < .005$

Note. Two absolute difference scores for each subject were calculated by the following formulae:

Fr = sum of 2 ratings of friendly persons.

Un = sum of 2 ratings of unfriendly persons.

SRF = self rating of friendliness.

(1) $|2SRF - Fr|$

(2) $|2SRF - Un|$

Scores (1) and (2) formed repeated measures FR in the analysis of variance.

TABLE D-25

SUMMARY OF ANALYSIS OF VARIANCE OF ABSOLUTE DIFFERENCES:

EXPERIMENT II - FRIENDLINESS

Source	df	Mean Square	F
SELF-ESTEEM (SE)	2	154,462.33	0.20
GROUPS within SE	18	759,170.55	1.59
SUBJECTS within Groups S(G)	42	476,584.69	
FRIENDLY-UNFRIENDLY (FR)	1	96,119,278.60	132.91***
SE x FR	2	212,287.24	0.29
S(SE) x FR	18	723,205.77	1.02
S(G) x FR	42	707,630.77	

*** $p < .005$

Note. Two absolute difference scores for each subject were calculated by the following formulae:

Fr = sum of 4 ratings of high friendly plus
sum of 4 ratings of moderately friendly.

Un = sum of 4 ratings of moderately unfriendly plus
sum of 4 ratings of low friendly.

SRF = self rating of friendliness.

(1) $|8SRF - Fr|$

(2) $|8SRF - Un|$

Scores (1) and (2) formed repeated measures FR in analysis of variance.

TABLE D-26

MEAN ABSOLUTE DIFFERENCE SCORES:

EXPERIMENT I - FRIENDLINESS

	(1)	(2)
HIGH SELF-ESTEEM	131.24	214.67
MODERATE SELF-ESTEEM	142.24	197.71
LOW SELF-ESTEEM	124.14	190.00

Note. See Table D-24 for explanation of calculation of scores.

TABLE D-27

MEAN ABSOLUTE DIFFERENCE SCORES:

EXPERIMENT II - FRIENDLINESS

	(1)	(2)
HIGH SELF-ESTEEM	358.52	2268.71
MODERATE SELF-ESTEEM	316.67	2164.71
LOW SELF-ESTEEM	508.19	2023.29

Note. See Table D-25 for explanation of calculation scores.

TABLE D-28

SUMMARY OF ANALYSIS OF VARIANCE OF ABSOLUTE DIFFERENCE:

EXPERIMENT I - COMPETENCE

Source	df	Mean Square	F
SELF-ESTEEM (SE)	2	6,776.34	0.22
GROUPS within SE G(SE)	18	30,360.62	1.24
SUBJECTS within Groups S(G)	48	24,393.45	
COMPETENT-INCOMPETENT (CO)	1	267,485.07	15.43***
SE x CO	2	2,440.41	0.14
G(SE) x CO	18	17,332.57	1.60
S(G) x CO	42	10,851.78	

*** $p < .005$

Note. Two absolute difference scores for each subject were calculated by the following formulae:

Co = sum of 2 ratings of competent persons.

In = sum of 2 ratings of incompetent persons.

SRC = self rating of competence.

(1) $|2SRC - Co|$

(2) $|2SRC - In|$

Scores (1) and (2) formed repeated measures CO in the analysis of variance.

TABLE D-29

SUMMARY OF ANALYSIS OF VARIANCE OF ABSOLUTE DIFFERENCE:

EXPERIMENT II - COMPETENCE

Source	df	Mean Square	F
SELF-ESTEEM (SE)	2	172,848.53	0.70
GROUPS within SE G(SE)	18	245,811.68	0.84
SUBJECTS within Groups S(G)	42	291,919.69	
COMPETENT-INCOMPETENT (CO)	1	13,596,576.14	35.83***
SE x CO	2	219,629.29	0.58
G(SE) x CO	18	379,458.90	1.90
S(G) x CO	42	200,218.64	

*** $p < .005$

Note. Two absolute difference scores for each subject were calculated by the following formulae:

Co = sum of 4 ratings of high competent plus sum of 4 ratings of moderately competent.

In = sum of 4 ratings of moderately incompetent plus sum of 4 ratings of low competent.

SRC = self rating of competence.

(1) $|8SRC - Co|$

(2) $|8SRC - In|$

Scores (1) and (2) formed repeated measures CO in analysis of variance.

TABLE D-30

MEAN ABSOLUTE DIFFERENCE SCORES:

EXPERIMENT I - COMPETENCE

	(1)	(2)
HIGH SELF-ESTEEM	113.95	215.14
MODERATE SELF-ESTEEM	155.33	242.81
LOW SELF-ESTEEM	132.71	199.14

Note. See Table D-28 for explanation of calculation of scores.

TABLE D-31

MEAN ABSOLUTE DIFFERENCE SCORES:

EXPERIMENT II - COMPETENCE

	(1)	(2)
HIGH SELF-ESTEEM	375.10	1210.48
MODERATE SELF-ESTEEM	390.71	988.14
LOW SELF-ESTEEM	506.14	866.81

Note. See Table D-29 for explanation of calculation of scores.